This catalog is published for informational purposes. Although every effort has been made to ensure its accuracy, it is not to be considered an irrevocable contract between the student and Merced College. The college reserves the right to change provisions and descriptions at any time while taking precautions that such changes do not adversely affect enrolled students. Students are advised to consult the current Schedule of Classes and college counselors for supplementary information.

Cover Design by Richard Manifest, Merced College Reprographics Supervisor
FROM THE PRESIDENT

At the time this catalog went to print, our Board of Trustees was in the midst of searching for a new Superintendent/President of the Merced Community College District. It is hoped the new Superintendent/President will be in place prior to the start of the fall semester.

As we prepare to celebrate 50 years of service to our community, we are glad you are considering Merced College as the path to continuing your education. Our faculty and staff are here to support you in reaching your academic goals.

Benjamin T. Duran, Ed.D.
Superintendent/President
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ACADEMIC SCHEDULE 2012-2013

SUMMER 2012

April 11, 2012 ................................................................. Summer 2012 Semester Registration Begins
June 11, 2012 ...................................................................... Summer Session Begins
June 12, 2012 ................................................................. Refund Deadline for 6-week classes meeting MTWTh
June 20, 2012 ................................................................. Pass/No Pass Option Deadline for 6-week classes meeting MTWTh
June 18, 2012 ........................................................................ Last Chance to Drop with No Entry on Transcript for 6-week classes meeting MTWTh
July 4, 2012 ........................................................................ Independence Day Observed
July 11, 2012 ........................................................................ Last Chance to Drop with a "W" for 6-week classes meeting MTWTh
July 19, 2012 ........................................................................ Regular Summer Session Ends

FALL 2012

April 11, 2012 ........................................................................ Fall 2012 Semester Registration Begins
August 9-10, 2012 .............................................................. Fall Flex Day (Some College Services unavailable)
August 13, 2012 ..................................................................... Fall Semester Instruction Begins
August 13, 2012 ..................................................................... Adds Require Instructor’s Signature (18 week classes)
August 26, 2012 ..................................................................... Refund Deadline (18-week Classes)
September 3, 2012 ............................................................. Labor Day Holiday
August 27 - October 19, 2012 ................................................ AA/AS/AA-T/AS-T and Certificate Applications Accepted
September 4, 2012 ................................................................ Last Chance to Drop With No Entry on Transcripts (18-week Classes)
September 14, 2012 ................................................................ Pass/No Pass Option Deadline
October 15, 2012 ........................................................................ Fall Mid-session Begins
November 12, 2012 ............................................................... Veterans Day Holiday
November 18, 2012 ................................................................ Last Chance to Drop With a "W" for (18-week Classes)
November 22-23, 2012 ........................................................... Thanksgiving Holiday
December 14, 2012 ....................................................................... Fall Semester Ends

SPRING 2013

October 10, 2012 ........................................................................ Spring 2013 Semester Registration Begins
January 21, 2013 ........................................................................ Martin Luther King’s Day Holiday
January 10-11, 2013 .............................................................. Spring Flex Days (Some College Services Unavailable)
January 14, 2013 ........................................................................ Spring Semester Instruction Begins
January 14, 2013 ..................................................................... Adds Require Instructor’s Signature(18-week Classes)
January 27, 2013 ..................................................................... Refund Deadline (18-week Classes)
January 28 - March 8, 2013 ................................................ AA/AS/AA-T/AS-T and Certificate Applications Accepted
February 15, 2013 ........................................................................ Lincoln’s Day Holiday
February 4, 2013 ....................................................................... Last Chance to Drop With No Entry on Transcripts (18-week Classes)
February 18, 2013 ....................................................................... Washington’s Day Holiday
February 15, 2013 ..................................................................... Pass/No Pass Option Deadline
March 25, 2013 ........................................................................ Spring Mid-session Begins
March 29, 2013 ........................................................................ Scholarship Application Deadline
April 1-5, 2013 .............................................................................. Spring Break
March 29, 2013 ........................................................................ Good Friday – campus closed
April 28, 2013 ............................................................................ Last Chance to Drop with a "W" (18-week Classes)
May 24, 2013 .......................................................................... Spring Semester Ends/Graduation
May 27, 2013 ............................................................................ Memorial Day - campus closed

Calendar dates are subject to revision.
Consult the current Schedule of Classes for updated information.
# Academic Calendar 2012-2013

## Summer Session
- June 11-July 19
- Census Day (6-week session), June 17

## Fall Session
- August 13
- Labor Day, September 3

## Mid-Semester Begins
- October 15

## Winter Break
- December 20-24

## New Year's Day
- January 1

## Spring Session
- March 18

## Spring Break
- April 1-5

## Good Friday
- April 19

## Memorial Day
- May 27

## Finals
- December 10-14

## End of Semester
- December 14

## Spring Break
- February 18

## College Closed
- February 15

## Good Friday
- April 5

## Memorial Day
- May 27

## Summer Session
- June 10-July 18
BOARD OF Trustees

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VACANT
Vice President of District Administrative Services

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B.S., University of San Francisco; M.A., National University

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B.A., Sonoma State University, M. M., University of Southern California

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Dean of Career and Technical Education
B.S., M.S., California Polytechnic State University, San Luis Obispo

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B.S., M.A., California State University, Fresno; Ed.D, University of La Verne

KARYN DOWER
Dean of Economic and Workforce Development, Community Services and Noncredit
A.A., Merced College; B.A., Chapman University; M.S., Walden University

DOUGLAS KAIN
Dean of Math, Science and Engineering
M.A., Humboldt State University; B.A., Ph.D, University of California, Berkeley

KEVIN KISTLER
Dean of English, Basic Skills & Child Development
B.A. San Jose Bible College; M.Div. Golden Gate Theological Seminary; M.B.A, Ed.D. Pepperdine University; J.D. Taft Law School.
Educational Directors

SUSAN WALSH
Director, Learning Resources Center
A.A., Merced College;
B.A., University of California, Davis;
M.L.S., San Jose State University;
Ed.D., California State University, Fresno/University of California, Davis

VACANT
Director, Disabled Student Services/Student Health Services

Instructional Directors

MANUEL ALVARADO
Director, Workplace Learning Resource Center
B.A. California State University, Fresno

OMAR AMAVIZCA
Learning Resources Center Technical Manager
A.A., Fresno City College;
B.S., California State University, Stanislaus

BECKY BARABÉ
Director, Business, Industry & Community Services
B.A., University of California, Berkeley;
M.A., Fresno Pacific University

JEANETTE BENSON
Director, Center of International Trade Development (CITD)
CGBP, Certified Global Business Professional
A.A., Merced College;
B.S., California State University, Stanislaus

TOMASIA DRUMMOND
Director, Student Success
A.A. Modesto Junior College;
B.A. Chapman University; M.S. University of La Verne

JANET LYLE
Director, Continuing Education Program
B.A., Excelsior College

Marilyn Scoby
Director, Child Care Center
A.A., Merced College;
B.A., Pacific Oaks College

Student Services Directors

REGINA COLETTO-LEAP
Director, Office of Relations with Schools/Cal-SOAP
B.A., California State University, Chico;
M.A., California State University, Stanislaus

MARIO R. CORDOVA
Director, Extended Opportunity Programs and Services
A.A., Bakersfield College;
B.A., San Jose State University;
M.S., Oregon State University; Ph.D., University of Oregon

VERONICA OFORLEA
Director, CalWORKs
B.A., California State University, San Bernardino;
M.S., Western University of Health Sciences

SHARON REINHARDT
Director, Financial Aid; Registrar
B.S., University of West Florida
The History of Merced County
Prior to the discovery of gold in California, the San Joaquin Valley was pristine. Wild clover grew taller than a horse’s head. Streams teemed with salmon, bass, and trout. Grizzly bears and antelope roamed far and wide. The early inhabitants of the valley, the Northern Valley Yokuts, estimated to number around 30,000, roved the entire valley floor. During an 1806 expedition, Ensign Gabriel wrote of finding a welcoming river to quench the expedition’s thirst. He named it El Río de la Nuestra Señora de la Merced, The River of Our Lady of Mercy, known simply today as the Merced River. The valley landscape changed rapidly when gold prospectors overran the area on their way to the gold fields.

When California achieved statehood in 1850, Mariposa County covered much of the valley, extending to a mutual boundary with San Diego and Los Angeles counties. In 1855, lowland farmers decided they did not have much in common with the miners of the foothills and mountains and petitioned to have a section split off to form a new county. When the petition was granted, Governor John Bigelow formed Merced County on April 19, 1855. According to the 1857 tax assessment rolls, the new county hosted a population of 277 with the first county seat located in Snelling. Once the railroad came through the county, much of the business and the county seat moved to the new town of Merced, which was incorporated in 1889.

Since that day, growth and change has continued in Merced County.

District and Organization
The Merced Community College District (District) is composed of most of Merced County, the area including the Chowchilla Union High School District in Madera County, the Dos Palos Joint Elementary School District in Fresno County, and the Los Baños Unified School District. The District is governed by a seven-member elected Board of Trustees. The main campus is located on M Street in Merced. The Los Baños Campus is located on Highway 152 in the City of Los Baños.

The Beginnings of the College District
Merced College is a California public community college operated by the Merced Community College District, which was formed by a vote of the people of the Le Grand and Merced Union high school districts on February 27, 1962. The District became effective for all purposes on July 1, 1963. The District, which included the eastern half of Merced County at that time, consisted of the areas served by these two high school districts. The Board of Trustees consisted of five elected-at-large members.

In later years, the Board of Trustees was expanded with two additional trustees, one to specifically represent the Dos Palos/Los Baños area and one to represent the Chowchilla area. Elections were also changed from at-large elections to District elections. Thus, the Board now numbers seven trustees, each elected within a specific area of the District.

Philosophy
A democratic society functions best when its members are educated and active participants. To encourage this participation, Merced College provides educational opportunities for all who qualify and can benefit. This education involves having a respect for and awareness of all cultures, as well as the dignity and worth of all individuals.

Merced College is dedicated to the pursuit of excellence. The leadership and educational services provided by the College reflect and enhance the cultural, economic, and social life of the community and respond to its changing needs and interests. Recognizing that learning is a life-long process, the College provides preparation for a complex and changing society while maintaining high academic standards. The College also fosters individual learning and critical thinking to enhance awareness of the interrelationship and interdependence of all persons.

Mission
In a rapidly changing and increasingly global society faced with great challenges, Merced College faculty, staff, and leadership are committed to continuously improving methods of providing an accessible, affordable, and relevant education that improves the quality of life for all students and their communities.

Recognizing that education is never a mistake, Merced College serves as a gateway to the future by welcoming all students from our richly diverse region. We prepare our students for the next stage of their lives by providing the following:
- A supportive environment
- Committed and caring faculty, staff, and leadership
- Mutually beneficial community partnerships
- State-of-the-art facilities
- The latest technology

Vision Statement
Merced College will provide students with a transformative educational experience by embracing innovative techniques and practices to empower a diverse college community.

Core Values and Beliefs
Student Success
We focus on student access and success.

Supportive Atmosphere
We support an atmosphere of trust where communication and teamwork cultivate a rich environment for teaching and learning.
Diversity
We embrace diversity as a strength of our community and celebrate it in our institution.

Institutional Student Learning Outcomes

(Adopted, April 3, 2007 and reviewed April 2010)

Communication: Use language and non-verbal modes of expression appropriate to the audience and purpose. (GE Breadth Areas A and C)

Examples: Students will be able to:
1. Compose coherent written communication appropriate to the audience
2. Read and analyze written communication appropriate to the subject
3. Construct and deliver oral communication appropriate to the audience
4. Comprehend, analyze, and utilize aural and visual communication in its various modes.
5. Design and deliver presentations appropriate to the audience

Computation: Use mathematical skills and various aspects of technology appropriate to the task. (GE Breadth Areas A and B)

Examples: Students will be able to:
1. Analyze and apply mathematical concepts to an appropriate task
2. Appraise various aspects of technology and apply them to an appropriate task

Cognition: Use critical thinking skills to analyze, synthesize, and evaluate ideas and information. (GE Breadth Areas A, B and C)

Examples: Students will be able to:
1. Evaluate information and incorporate it into appropriate tasks
2. Analyze information, develop an opinion, and support it
3. Examine, create, and/or evaluate materials and objects by using aesthetic criteria.
4. Analyze and solve problems using logical and creative methods
5. Assess the impact of science and technology on the world

Global and Community Consciousness and Responsibility: Demonstrate understanding of different cultures and knowledge of historical eras and importance of community involvement. (GE Breadth Areas D)

Examples: Students will be able to:
1. Distinguish and understand diverse cultures
2. Evaluate historical knowledge and relate it to current issues
3. Recognize the impact of local, national, and global involvement

Personal Development and Life-Long Learning: Demonstrate self-management, maturity, and growth through practices that promote physical, mental, and emotional well-being. (GE Breadth Area E)

Examples: Students will be able to:
1. Analyze and apply interpersonal skills
2. Demonstrate an understanding of life long learning
3. Relate a healthy lifestyle and wellness to personal choices
4. Evaluate and adhere to professional and academic ethical standards

Accreditation
Merced College is fully accredited by the Western Association of Schools and Colleges and is approved by the State Department of Education to train veterans under provisions of the G.I. Bill of Rights, and by the United States Immigration Service. The College offers a lower division program consisting of courses paralleling those of four-year colleges and universities, the credits of which are transferable to all other accredited colleges and universities.

Merced College Foundation
The Merced College Foundation is a non-profit organization formed in November 1973. The mission of the Foundation is to provide support to Merced College by administering and awarding scholarships to students, accepting and acquiring gifts, bequests, endowments, and real and personal property as sources of income for the Foundation, and to serve as the organization through which special projects desired by the College can be developed and administered. For more information, call the Foundation office at (209) 381-6470.

The Merced Campus
The Merced Campus is located one mile north of Olive Avenue in Merced, on the east side of M Street. Originally consisting of 110 acres presented as a gift to the College by the C-H-M and the Yosemite Land & Cattle Companies through the efforts of Merced city officials, the campus expanded to 269 acres with additional purchases of adjacent land.

Classes began on September 10, 1963 at a temporary site located at the Merced County Fairgrounds. Classes at the permanent campus began in the summer of 1966. The new campus was completed in spring 1967 and dedication ceremonies were held on April 23, 1967.

The Administration Building, the Science Building, and a temporary library facility were the first main buildings built. The Student Union was completed in November 1967. Since that time, facilities were added, including a gymnasium, an automotive shop, agriculture facilities, and technical labs for drafting, engineering, and vocational nursing. The Lesher Library and the Theater were completed for use in fall 1972.

Over the next 30 years, many facilities were completed or modified to meet current needs. The Child Development Center was completed in spring 2002, expanding the outer perimeter of the College’s educational facilities northward.

In 2002, voters passed a $53.5 million bond measure for the Merced Campus (Measure H). The following projects have been completed: the North Loop Road, a campus wide energy retrofit, the Learning Resources Center, the Science Building renovation, the Business Resource Center, the Lesher Building renovation, Administration Building renovation, Student Union Building...
renovation, and the Allied Health Complex Project. In 2012, the Theater will be renovated to provide ADA access to the Theater Basement. Future planned projects include the Agriculture Science/Industrial Technology Complex Project and Vocational Renovation/Expansion Project.

The Los Baños Campus of Merced College

The Los Baños Campus, an educational center 40 miles west of the Merced campus, serves the people of Los Baños, Dos Palos, and the surrounding areas. It began as a full-service campus in September 1971 in rented facilities. In 1973, the Los Baños Unified School District's voters approved joining the District and the Dos Palos Joint Elementary School District's voters approved moving from the West Hills Community College District to the District in 1978. The Los Baños Campus was formally approved by the California Community Colleges Chancellor's Office as an educational center in 1979.

In 1982, thanks to a donation of 10 acres by Richard Menezes, the campus moved to a site on Mercey Springs Road with modular buildings providing educational opportunities and serving as a cultural and intellectual center for the residents of the Westside of Merced County.

Thanks to a donation of 125 acres by Larry and Georgeann Anderson and to the passage of a local bond measure, construction of a new campus began in 2005. The new campus, located on Highway 152 on the western boundary of Los Baños, opened in 2007.

The campus offers a variety of programs for day and evening classes and provides a wide range of academic and vocational classes, enabling a student to stay in Los Baños and take all the courses necessary for an associate degree and fulfill all the breadth requirements of four-year state colleges. Los Baños Campus students may also complete several certificate programs.

Admission and registration procedures are the same as those for the Merced campus. For further information, contact the Los Baños Campus at 22240 Highway 152, Los Baños, CA 93635, or by calling (209) 826-3495.

Off-Campus Programs

In addition to extensive day and evening programs at the Merced and Los Baños campuses, Merced College schedules classes at other sites throughout the District, including Chowchilla, Delhi, Dos Palos, Livingston, and Mariposa. Consult the current Schedule of Classes for class offerings and locations. For more information, contact Dean Karyn Dower at (209) 384-6067.

CVHEC

Merced College is one of the member institutions of the Central Valley Higher Education Consortium (CVHEC). Members represent accredited, non-profit and private colleges and universities in the Central Valley from Bakersfield to Stockton. The goal of the consortium is to increase the number of students prepared for, enrolling in, and graduating from college.
General Information

Educational Opportunities
Founded in 1962, Merced College offers students an opportunity to obtain an associate degree or to transfer academic credits to the California State University or the University of California. The College offers vocational certificates in various programs and serves all students who live within the District.

Admission to Merced College
Each candidate should have a high school diploma or equivalent, or should be a minimum of 18 years old, and should be able to take advantage of the instruction offered.

Registration at Merced College
The Office of Admissions and Records has the responsibility to admit and assist with the registration of all eligible students. Prospective students should follow these general guidelines for admission and registration.
1. Participate in the orientation/advising process.
2. Complete the application for admission at www.cccapply.org
3. Register online for classes and page fees.

Detailed information regarding this process is available online.
- Merced Campus - http://www.mccd.edu/students_new_returning.html
- Los Banos Campus - http://www.mccd.edu/off_campus/los_banos/orientation.html

Student Services
Counseling services are available to assist students in the selection of appropriate courses and to provide other course-related assistance and referrals. Financial aid is available to all eligible students. Many grants and/or scholarship can help pay for educational expenses. For more information regarding these and other student services go to www.mccd.edu/services/index.html.

Información detallada tocante estos procesos está disponible en el internet:
- El Colegio de Merced en Merced: http://www.mccd.edu/students_new_returning.html
- El Colegio de Merced en Los Baños: http://www.mccd.edu/off_campus/los_banos/orientation.html

Servicios Estudiantiles
Se ofrecen servicios de consejos para ayudar estudiantes elegir clases apropiadas y a proveer asistencias relacionadas a clases. También se ofrece asistencia financiera a estudiantes que califican. Hay muchas becas que ayudan con los gastos educacionales. Si necesita mas informacion tocante todos estos servicios, contacate el Colegio Comunitario de Merced a: www.mccd.edu/services/index.html

Information in Spanish

Oportunidades Educativas
Fundada en 1962, El Colegio de Merced ofrece a los estudiantes la oportunidad de obtener un grado asociado o la transferencia de créditos académicos de la Universidad Estatal de California o la Universidad de California. El Colegio ofrece certificados vocacionales en diversos programas y sirve a todos los estudiantes que viven dentro del Distrito.

Información en español

Student Services
Counseling services are available to assist students in the selection of appropriate courses and to provide other course-related assistance and referrals. Financial aid is available to all eligible students. Many grants and/or scholarship can help pay for educational expenses. For more information regarding these and other student services go to www.mccd.edu/services/index.html.

Información en español

Oportunidades Educativas
Fundada en 1962, El Colegio de Merced ofrece a los estudiantes la oportunidad de obtener un grado asociado o la transferencia de créditos académicos de la Universidad Estatal de California o la Universidad de California. El Colegio ofrece certificados vocacionales en diversos programas y sirve a todos los estudiantes que viven dentro del Distrito.

Registrazion en El Colegio Comunitario de Merced
La Oficina de Admisiones y Archivos es responsable por la admision y asistencia en la registrazion de todos estudiantes que califican para admision. Estudiantes prospectivos deben de seguir las directivas generales sobre admision y registrazion:
- Participen en los procesos de admision y consejos.
- Cúmplan la aplicacion por admision a www.cccapply.org
- Registrezse en el internet por classes y el pago de matricula

Kev Pab Tub Ntxhais Kawm Ntawv

Qhov Zoo Ntawm Kev Kawm Ntawv
Teub tsum thuam 1962, Merced College muaj kev kawm ntawv yam rau cov tub ntxhais kawm ntawv kow summ kev daim Associate in Arts (AA) los yob Associate in Science (AS) degree, lossis xav tsaih kawm nxiv rau University of California (UC), California State University (CSU). Merced College muaj kev daim hom certificates rau ntawv yam bxi juu ha nwm lwv, thib pa cov pejxeem nyob cheeb tsam hauv lu nrog.

Sau Npe Kawm Ntawv nyob Merced College
Qhov chaw ua hauj lwv Office of Admissions and Records (A&R) lub luaj hauj lwv yob pa cov txaih txais cov tub ntxhais kawm ntawv uas muaj feemcuam raws cai tuaj kawm. Cov xav tuaj kawm ntawv yuav tau ua raws cov txheejtxheem txais los thib sauv npe kawm ntawv.

Tuaq koom lub rooj qhia txog txheejtxheem kev sauv npe kawm ntawv (orientation)/kev sab laj (advising).
Sau thiab teb raws daim ntawv application for admission hauv www.cccapply.org
Sau thiab zwm online kom tau cov chav kawm thib cov nqi.

Kev Ntxhais Kawm Ntawv

Qhov Zoo Ntawm Kev Kawm Ntawv
Teub tsum thuam 1962, Merced College muaj kev kawm ntawv yam rau cov tub ntxhais kawm ntawv kow summ kev daim Associate in Arts (AA) los yob Associate in Science (AS) degree, lossis xav tsaih kawm nxiv rau University of California (UC), California State University (CSU). Merced College muaj kev daim hom certificates rau ntawv yam bxi juu ha nwm lwv, thib pa cov pejxeem nyob cheeb tsam hauv lu nrog.

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Tuaq koom lub rooj qhia txog txheejtxheem kev sauv npe kawm ntawv (orientation)/kev sab laj (advising).
Sau thiab teb raws daim ntawv application for admission hauv www.cccapply.org
Sau thiab zwm online kom tau cov chav kawm thib cov nqi.

Yog xav tau ntau txheej xov information ntxiv, tshawb tau hauv online.
Tsev Kawm Merced Campus - http://www.mccd.edu/students_new_returning.html
Tsev Kawm Los Banos Campus - http://www.mccd.edu/off_campus/los_banos/orientation.html

Kev Pab Tub Ntxhais Kawm Ntawv
Academic Freedom

Because the vitality of a society is energized and sustained by ideas, and as the nature of a college involves the examination and discussion of these ideas, a policy of academic freedom protecting such free examination and expression historically has been deemed necessary.

To this end, the District is committed to free discussion and open inquiry. We recognize that the freedom to think, to read, to speak, and to question is necessary for the development of an informed citizenry.

This freedom shall be integral to the philosophy of this District and is guaranteed to students, faculty, administration, and staff. This freedom is both a right and a responsibility. As a right, it assures unimpeded research, study, and inquiry. It also assures the right to free expression in both public and private settings, including the right to disagree.

As a responsibility, it obligates members of the college community to present, discuss, and interpret ideas, knowledgeably, fairly, and objectively, with openness to the ideas of others, with the intention to stimulate independent thinking, and with sensitivity to the special situations of students.

To ensure the principles of intellectual freedom, District administrators and the Board of Trustees will demonstrate their support by actively working to foster this freedom.

Academic Honesty

Academic dishonesty is a violation of the Standards of Student Conduct (Board Policy 5500). The College has the responsibility to ensure that grades assigned are indicative of the knowledge and skill level of each student. Acts of academic dishonesty make it impossible to fulfill this responsibility.

Academic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, and misuse of College computers and software. Disciplinary actions may include an oral reprimand, a failing grade on all or part of a particular paper, project, or examination, or the assignment of an “F” grade in cases where the dishonesty is more serious, premeditated, or a repeat offense. Serious or repeated offenses may also result in suspension from the College.

The Academic Honesty procedure was developed by the Merced College Academic Senate and is administered by the Office of the Vice President of Student Personnel (Board Policy 5540). Copies are available from the Office of Student Personnel.

Conduct

The Merced College Standards of Student Conduct, as approved by the Board of Trustees, is available online. Policies affecting student conduct may be found under the links related to Board Policies and Procedures 5500. Copies also may be obtained from the Office of Student Personnel. Merced College students are expected to conduct themselves in an exemplary manner. Students are prohibited from using or possessing drugs or alcoholic beverages on the campus or at any school function held on or off campus. Students not following standards of student conduct may experience a range of disciplinary actions.

The Student Code of Conduct (Board Policy 5500) also may be found on the Merced College web site under the link for Board of Trustees.

Copyrighted Materials, Including Music, Video and Printed Materials

The District supports the Higher Education Opportunity Act and Digital Millennium Copyright Act, which outline efforts to eliminate the illegal distribution of copyrighted material. Under the law, college administrators may be obligated to provide copyright holders with information about users of the District’s information network who have violated the law. Accordingly, students are prohibited from using the information network to illegally download and/or share music, video and all other copyrighted intellectual property. Illegal forms of downloading and file sharing as well as the unauthorized distribution of copyrighted materials are violations of the law and may subject offenders to academic sanctions from the College as well as criminal and civil penalties, including a lawsuit brought by the Recording Industry Association of America (RIAA). In addition to being illegal, file sharing drains the District’s network bandwidth, which slows computer connections for students and employees who are using the network for legitimate academic purposes and ultimately creates an unnecessary financial burden to the College.

The District has developed policies with consequences to ensure that students properly use the information network and respect music and other forms of intellectual property as well as conduct responsible use of the Internet. These policies are available from the President’s Office or from the Learning Resources Center.

Crime Awareness and Campus Security

In compliance with the Federal Campus Security Act, Merced College makes an annual and a three-year security report available upon request. This report contains procedures for students and others to report criminal actions or other emergencies occurring on campus. It also includes the District’s policy in responding to such reports, a policy statement on security and access to campus facilities, and the enforcement authority of security personnel.

The report also contains policies that encourage accurate and prompt reporting of all crimes to campus security and appropriate police agencies, information on programs which inform students and employees about security procedures and practices and which encourage them to be responsible for their own security and that of others, a description of programs to inform students and employees about crime prevention, and statistics on the on-campus occurrence of reported criminal offenses. Also included are policy statements on the possession, use, and sale of alcohol and illegal drugs, information on enforcement of state underage drinking laws and federal and state drug laws, and descriptions
of available drug or alcohol abuse programs. Copies of pertinent data, program information, and procedures are available from the Security Office.

Dress
There is no dress code at Merced College, but it is expected that a student's dress will follow community standards.

Drug and Alcohol Free Campus
Merced College is an alcohol and drug free educational institution. In addition to being a violation of state and federal laws, Merced College Board Policies and Administrative Procedures #3550, Drug-free Environment and Drug Prevention Program, and #5500, Standards of Conduct, make the distribution, possession, use, or being under the influence of alcohol or illegal controlled substances, or offering, arranging or negotiating the sale of any drug paraphernalia [as defined in California Health and Safety Code Section 11014.5], forbidden on campus, at off-campus centers, or at campus sponsored events or activities [except as noted in Board Policy and Administrative Procedure #3560].

The following information is provided to you to make you aware of the disciplinary and/or criminal actions that can result from violations as stipulated in Board Policies and Administrative Procedures #3550 and #5500. It provides information on potential health risks and available support resources. Students are asked to review the “Standards of Conduct” section in the College catalog for details regarding legal and disciplinary sanctions for violations of these policies.

As an educational institution, we recognize the importance of providing all members of the college community with information on the effects of alcohol and drug use. Students may obtain such information through the Student Health Services website, at www.mccd.edu/studenthealth/ or by contacting Student Health Services directly.

If there are any questions regarding these regulations, please see the Vice-President of Student Personnel Services, located in the Administration Building.

DISCIPLINARY ACTIONS
Disciplinary action for violation of the Merced College Drug and Alcohol Policies:

In addition to the penalties stated in the Merced College Board Policies and Administrative Procedures #3550 and #5500, the Merced College Police Department will be notified of the offenses and may initiate criminal action with the Merced County District Attorney’s Office.

HEALTH RISKS
Substance abuse on college campuses is not new, but it is taking on more extreme and dangerous forms. Binge drinking, prescription drug abuse, alcohol based energy drinks, and the abuse of other substances may result in negative consequences for students including arrests, injuries, and high-risk sexual behavior.

According to the Merced County 2010 Indicators of Alcohol and Other Drug Risk and Consequences for California Counties Report:

- Approximately 28 percent of Merced County residents age 18 and older participated in binge drinking in 2007 compared to the statewide rate of 30 percent.
- Males participated in binge drinking much more frequently than females (35 percent versus 21 percent) in 2007.
- The highest rate of admissions for drug and/or alcohol treatment was for 25 to 34 year olds with a rate of 814 per 100,000 in 2008.
- The rate of fatalities in alcohol-involved accidents was higher in Merced County than the state overall each year (10 year period).
- Males accounted for nearly three-fourths of total parties who had been drinking in alcohol-involved accidents in 2008.
- 18 to 24 year olds (353 per 100,000) accounted for the highest rate of parties who had been drinking in alcohol-involved accidents in 2008. The next highest rate was for 25 to 34 year olds with a rate of 249 per 100,000.

Alcohol and drug use can cause illness, permanent brain or organ damage, and death. Health risks from excessive substance abuse may include poor vision, loss of coordination, memory loss, loss of sensation, mental and physical disturbances (DT’s), brain damage, liver failure, digestive problems, heart disease, and malnutrition. When alcohol is used with other drugs, there is a greater risk of serious illness or death.

Using drugs or alcohol can make it difficult to remember things, affecting the ability to succeed in class. Substance use may cause loss of coordination and the ability to think clearly. The use of alcohol or drugs may cause or increase feelings of anxiety, depression, and unhappiness, and may even trigger psychosis (loss of reality). Substance use or abuse can have a significantly negative impact on personal relationships.

Alcohol and drug abuse have significant consequences for the health and well-being of those who use, as well as those around them. If you or a fellow student has a drug or alcohol related problem, you are encouraged to contact Student Health Services, (209) 384-6045, so that we may assist you in locating the appropriate resources.

Gainful Employment Disclosure Metrics
Federal Department of Education’s regulation on Gainful Employment requires each college to provide students with Gainful Employment (GE) disclosure metrics that can be helpful when deciding where to obtain career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:

https://skydrive.live.com/view.aspx?cid=5EE3D05E9620CF60&resid=5EE3D05E9620CF60%21223

Non-discrimination
The Merced Community College District prohibits discrimination on the basis of race, color, sex, religion, national origin, ethnic group identification, ancestry, age, physical or mental disability, medical condition, military service, sexual orientation, marital status, pregnancy, or any other basis prohibited by law.
The District operates in compliance with all applicable laws, regulations, and requirements related to its status as a public educational entity and the receipt of Federal and/or State funds, including but not limited to Title VI of the Civil Rights Act of 1964 and its amendments, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, the Age Discrimination Act of 1975, the Age Discrimination in Employment Act, and the California Fair Employment and Housing Act. In so doing, the District is committed to providing equal opportunities for all individuals in employment and in all programs and activities which it conducts. Therefore, no enrolled student or District employee or applicants for enrollment or employment with the District; or others who might receive the benefits of college activities, programs, and services shall be excluded from participation in, denied benefits of, or be subject to discrimination in any process, position, program, service, or activity, on any basis prohibited by law.

Individuals who believe they have been subjected to discrimination or harassment may initiate a complaint pursuant to the District’s Board Policy 3430 (Complaints of Unlawful Discrimination), which describes the District’s rules and procedures relating to unlawful discrimination, including instructions on how to initiate a complaint, how an individual’s complaint is processed, and a description of how an individual is notified of the outcome of his or her complaint, including enforcement of corrective action, if necessary.

Individuals who seek information and/or who wish to initiate a complaint for alleged acts of discrimination or harassment are directed to contact the Director of Human Resources at (209) 384-6102. A copy of Board Policy 3430, as well as assistance with initiating a complaint for alleged acts of discrimination or harassment, may also be obtained by contacting vice president of Administrative Services. The District maintains the confidentiality of all complaints of unlawful discrimination except where disclosure is required by law.

A copy of Board Policy 3430, complaint forms and other materials are available online at www.mccd.edu.

**Open Enrollment Policy**

It is District policy that, unless specifically exempted by statute, every course, section, or class, the average daily attendance of which is to be reported for state aid, wherever offered and maintained by the District, shall be fully open to enrollment and participation by any person who has been admitted to the College and who meets such prerequisites as may be established pursuant to Chapter II, Title 5 of the California Code of Regulations.

**Privacy of Records**

All student records of Merced College are kept in accordance with the provisions of the Family Educational Rights and Privacy Act of 1974. Students may request access to academic records which personally identify the student. The student may challenge the accuracy of the record or the appropriateness of its retention. Student consent is needed for the release of records covered by the Act to outside parties (i.e., other schools, prospective employers) except for those agencies entitled to access under the provisions of the Act (i.e., campus officials, federal educational and auditing officers). These provisions apply to records received and used after November 19, 1974.

Copies of the full text of the Family Educational Rights and Privacy Act of 1974 are available in the Admissions and Records office. Particular questions with respect to a student’s prerogative under the Family Educational Rights and Privacy Act should be directed to the Registrar.

**Sexual Harassment**

**Introduction**

Education Code 66281.5(b) requires the adoption of a policy statement setting forth the District’s commitment to provide an educational and work environment free from unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct or communications constituting sexual harassment.

**Purpose**

It is the intent of the Board of Trustees to deem as unacceptable any form of sexual harassment. Such conduct undermines the integrity of the classroom and/or the employment relationship or work/academic environment. Conduct constituting sexual harassment will not be tolerated in the District. It is understood that this policy is not intended to infringe upon Academic Freedom except to the extent provided by law.

**Description**

The policy applies to all aspects of employment and the academic environment, including but not limited to classroom conditions, grades, academic standing, employment opportunities, scholarships, recommendations, disciplinary actions, and participation in any community college activity.

All District employees who violate this policy may be subject to disciplinary action up to and including termination in accordance with applicable college procedures, Education Code sections, and/or collective bargaining agreements. Students who violate this policy may be subject to disciplinary measures up to and including expulsion in accordance with District policies and college procedures. Non-employees, such as sales representatives or service vendors are also covered by this policy and may be subject to corrective measures.

The District is concerned about the rights of the accused as well as the accuser and shall afford due process rights accordingly.

**Definition**

Sexual harassment is defined as unwelcome sexual advances, requests for sexual favors, and other verbal, visual, or physical conduct of a sexual nature, made by someone from or in the work or educational setting under any of the following conditions:

1. Submission to the conduct is explicitly or implicitly made a term or condition of an individual’s employment, academic status, or progress;
2. Submission to, or rejection of, the conduct by the individual is used as a basis of employment or academic decisions affecting the individual;
3. The conduct has the purpose or effect of having a negative impact on the individual’s work or academic performance, or of creating an intimidating, hostile, or offensive work or educational environment; or
4. Submission to, or rejection of, the conduct by the individual is used as the basis for any decision affecting the individual regarding benefits and services, honors, programs, or

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3. The conduct has the purpose or effect of having a negative impact on the individual’s work or academic performance, or of creating an intimidating, hostile, or offensive work or educational environment; or
4. Submission to, or rejection of, the conduct by the individual is used as the basis for any decision affecting the individual regarding benefits and services, honors, programs, or
activities available at or through the educational institution.

This definition encompasses two kinds of sexual harassment:
1. "Quid pro quo" sexual harassment occurs when a person in a position of authority makes educational or employment benefits conditional upon an individual's willingness to engage in or tolerate unwanted sexual conduct.
2. "Hostile environment" sexual harassment occurs when unwelcome conduct based on sex is sufficiently severe or pervasive so as to alter the conditions of an individual's learning or work environment, unreasonably interferes with an individual's academic work performance, or creates an intimidating, hostile, or abusive learning or work environment. The victim must subjectively perceive the environment as hostile, and the harassment must be such that a reasonable person of the same gender would perceive the environment as hostile.

Sexual harassment can consist of virtually any form or combination of verbal, physical, visual or environmental conduct. It need not be explicit, or even specifically directed at the victim. Sexually harassing conduct can occur between people of the same or different genders. The standard for determining whether conduct constitutes sexual harassment is whether a reasonable person of the same gender as the victim would perceive the conduct as harassment based on sex. The determination of whether an environment is hostile is based on the totality of the circumstances, including such factors as the frequency of the conduct, the severity of the conduct, whether the conduct is humiliating or physically threatening, and whether the conduct unreasonably interferes with an individual's learning or work.

Environmental sexual harassment is an academic or work environment that is permeated with sexually-oriented talk, innuendo, insults, or abuse not relevant to the subject matter of the class. A hostile environment can arise from an unwarranted focus on sexual topics or sexually suggestive statements in the classroom. An environment may be hostile if unwelcome sexual behavior is directed specifically at an individual or if the individual merely witnesses unlawful harassment in his or her immediate surroundings.

Implementation
This policy assigns ultimate responsibility for implementing the sexual harassment policy to the District Equal Employment Opportunity Officer. He/she shall also be responsible for insuring that other policies and procedures developed related to sexual harassment support this policy.

Retaliation
It is unlawful to retaliate against an employee or student who makes a complaint of sexual harassment, who communicates with or contacts District compliance officer(s) or regulatory agencies, or who is a potential witness or participates in any manner in a sexual harassment investigation, hearing, or proceeding.

A “no smoking” sign is not posted in the area and it is not within 20 feet of covered corridors, doors, elevators, stairways, stairwells and open windows.
- A safety and/or fire threat is not created by smoking.
- Smoking is not done in college vehicles. (A “no smoking” statement will be included on vehicle request forms and a “no smoking” sign will be installed in all District vehicles.)
- Smoke will not enter any District or District rented building. (Language will be included in rental agreements stating that smoking is not permitted indoors or near any entrances.)

Statement of Informed Consent
Research, including assessment and evaluation of the teaching and learning process, will be conducted at Merced College in established or commonly accepted educational settings and will involve normal educational practices.

Information gathered relating to student knowledge, skills, attitudes, and behaviors will be kept anonymous and/or confidential, and participation shall expose students to no or minimal risk of harm. By enrolling and attending Merced College courses, students have volunteered as subjects, have been fully informed, and have given their consent to participate in education-based research. Students will be fully informed should the research parameters change. The Family Educational Rights and Privacy Act of 1974 (FERPA) is a federal law regulating the privacy of student records and the obligations of the institution, primarily in the areas of release of the records and the access provided to those records. Students are protected under both FERPA law and the Human Subjects Review process.

References:
Merced College Board Policy 5040
Merced College Administrative Procedure 5040
Education Code Sections 76200
Title 5, Section 54600
Family Educational Rights and Privacy Act (FERPA)
HHS - Office for Human Research Protections

Student Equity
Merced College complies with California Community College Board of Governors’ regulations related to equity and historically underrepresented groups of students. Student equity activities include research and evaluation of programs for underrepresented students, establishing goals and schedules for implementing these programs, and identifying funding sources for these services. Copies of pertinent reports are available upon request from the vice president of Student Personnel.

Student Right-To-Know Disclosure
Completion Rate: 16.10%
Transfer Rate: 8.62%
(From 2008 COHORT Data)
In compliance with the Student-Right-to-Know and Campus Security Act of 1990 (Public Law 101-542), it is the policy of our college district to make available its completion and transfer rates to all current and prospective students. Beginning in Fall 2008, a cohort of all certificate-, degree-, and transfer-seeking first-time,
full-time students were tracked over a three-year period. Their completion and transfer rates are listed above. These rates do not represent the success rates of the entire student population at the College nor do they account for student outcomes occurring after this three-year tracking period.

Based upon the cohort defined above, a Completer is a student who attained a certificate or degree or became 'transfer prepared' during a three year period, from Fall 2008 to Spring 2011. Students who have completed 60 transferable units with a GPA of 2.0 or better are considered 'transfer-prepared'. Students who transferred to another post-secondary institution, prior to attaining a degree, certificate, or becoming 'transfer-prepared during a five semester period, from Spring 2009 to Spring 2011, are transfer students.

More information about Student Right-To-Know Rates and how they should be interpreted can be found at the California Community Colleges “Student Right-To-Know Information Clearinghouse Website” located at [http://srtk.cccco.edu/index.asp](http://srtk.cccco.edu/index.asp)

**Title IX, 504 and the Americans with Disabilities Act**

In compliance with Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the American with Disabilities Act, and the Age Discrimination Act of 1975, Merced College does not discriminate on the basis of race, color, national origin, sex, handicap, or age with respect to admission, participation, or employment in any of its educational programs and activities or in the provision of benefits and services to its students.

The College’s Title IX coordinator is the Human Resources Director and can be reached at (209) 384-6102. Inquiries concerning the application of Title IX, which prohibits sex discrimination, may be referred to the Title IX coordinator, or to the Office for Civil Rights, U.S. Department of Education, 221 Main Street, San Francisco, CA 95105, (800) 872-5327 (voice) or (415) 437-7786 (TDD).

The College’s designates a 504 and ADA Coordinator. For information concerning Section 504, which prohibits discrimination on the basis of handicap, you may contact the 504 coordinator for the Office for Civil Rights at the above address.

The procedures for filing a complaint may be obtained from persons listed above.

**Lub Luag Title IX, 504 Thiab Cov Neeg**


Tus Ceev lub luag Title IX haum Tsev Kwaw Ntaww yog Human Resources Director, (209) 384-6102. Yog xav paub txog lub luag Title IX, uas txoww tsis pub cais poj niam los yog txiv neeg, hu tuaj tau rau Tus Ceev lub luag Title IX, los yog lub Hoobkas ntawm Pejxeem Cov Cai. U.S. Department of Education, 221 Main Street, San Francisco, CA 95105, (800) 872-5327 (ua suab) los yog (415) 437-7786 (TDD).

Yog xav paub txog cov ntaub ntaww Tshooj 504, uas txoww tsis pub cais nqaij cv neeg disabilities, nej hu tau rau tus Coordinator ntawm Tshooj Cai 504 nyob haub lub Hoobkas ntawm Pejxeem Cov Cai nyob rau qhov chaw saum toj no.

Yog nej xav paub cov txheej txheem teev kev tsis txaus siab, hu tau rau cov neeg ua haujlvwm teev los saum nov.
Who Can Be Admitted
Any person who meets at least one of the following requirements is eligible to attend Merced College:

- Has graduated from an accredited high school with either a diploma or a high school certificate of completion.
- Has passed the California High School Proficiency exam.
- Possesses a GED.
- Is a non-high school graduate, 18 years of age or older, who is no longer attending high school and is able to benefit from instruction.

Persons who are under the age of 18 and/or currently attending high school may be admitted as a special part-time or full-time student with the permission of one's school principal, with parental consent, and with the approval of a college administrator. (See administrative Procedure 5011).

Semester System and Units
Merced College classes follow the semester system, and the majority of classes cover a period of 18 weeks. Students earn the number of units specified in the catalog upon successful completion of the course.

At Merced College, as in universities, a “unit” represents one hour per week for one semester of the student’s time in a lecture class, or three hours in laboratory or other exercise not requiring homework for preparation. A normal schedule of 15 college units presupposes that the average student will devote approximately 45 hours per week to college classes and to preparation.

Because varsity sports require no academic homework assignments, they require 10 hours per week of activity for three units of credit. There are also certain courses that are regulated by outside agencies (primarily for skill certification in vocational areas) in which additional mandated hours are required but for which additional student units are not rewarded.

Course Numbering
All courses offered at Merced College are considered to be lower division. No upper division credit is granted. Course numbers are assigned as follows:

Courses numbered 1-49 are certified as transferable to the California State University system. Other four-year institutions may accept courses numbered 1-49 as transferable, but students transferring to colleges outside the CSU system should consult the catalog of that college and confer with a counselor.

Courses numbered 50-79 and independent letters such as A, B, and C designate courses that apply only to A.A./A.S. Degrees and to certificate programs and are not normally transferable to four-year institutions.

Courses numbered 80-89 designate intermediate non degree-applicable basic skills courses OR certain occupational and activity credit courses. These courses do not apply to the Associate Degree or transfer programs.

Courses numbered 90-99 designate courses that are primarily non degree-applicable basic skills courses that do not apply to the Associate Degree or transfer programs.

Some courses meet computer and information literacy competency area requirements. These courses are noted with brackets [ ] in the course description.

California State University breadth areas and Intersegmental General Education Transfer Curriculum (IGETC) areas are noted in parentheses ( ).

Course Descriptions
Courses are listed alphabetically at the end of the discipline information. Each course is listed by number with the course title, the number of units, and the number of hours of lecture and laboratory instruction. Preceding each description are the prerequisites and/or corequisites of the course.

All credit courses listed in this catalog are graded courses and meet the definition of “college credit courses” as stated by Section 55002, Part VI of Title 5 of the California Code of Regulations.

It is District policy that unless specifically exempted by statute, every course, course section or class, the average daily attendance of which is to be reported for state aid, whenever offered and maintained by the District, shall be fully open to enrollment in and participation by any person who has been admitted to the College and who meets the prerequisites as may be established pursuant to Chapter 11, Division 2, Part VI, Title 5 of the California Administrative code, commencing with Section 58108.

Application
New or former students applying to Merced College must complete an application in order to enroll in classes. Former students are those who have had a lapse of at least one semester between enrollment periods. Applications may be submitted online through CCCAPPLY at www.cccapply.org. New students should bring a copy of prior transcripts, whether from high school or from another college attended. Students who are in grades K-12 must re-apply each semester they attend.

Matriculation Services
Mandated State of California matriculation services include an orientation, assessment, admission, counseling and advisement, and follow-up and referral. Since the intent of the services is to increase a student’s opportunity for success in their academic pursuits, one is expected to become a matriculated student unless there is an exemption.
Matriculated Student Defined
A matriculated student has fewer than 15 units at Merced College, has completed the matriculation orientation, assessment process, has met with a counselor, or has completed an Educational/Study Plan.

How to Become a Matriculated Student
To become a matriculated student, one must complete the following three matriculation services. To begin this process, call (209) 384-6000, option 8, (or (209) 826-3495 for Los Banos Campus students) or schedule an appointment at the Merced campus switchboard in the Barker Administration Building lobby for a matriculation orientation, assessment, and counseling. (Please note any special needs/accommodations required when scheduling these services. It may take more than one week to provide the accommodation required.)

Following the matriculation orientation, a student must:
1. Complete the admissions application (online through www.cccapply.org) (completed during the matriculation orientation).
2. Next, the student should obtain their Merced College ID card from the Admissions and Records Office on the second floor of the Lesher Student Services Center. The student must bring a photo ID with them.
3. Attend an assessment session. Your Merced College student ID card is required.
4. If you choose to meet with a counselor bring your assessment information and high school and/or other college transcripts to your counseling appointment.
5. Register for classes according to the appropriate priority registration group online through your MC4me portal account. If you are unable to register online you must submit a Schedule Request Form to the Admissions and Records Office.
6. Pay fees, according to the fee payment schedule in place at the time of registration, online through your portal account or at the Student Fees Office in the Lesher Student Services Center.

Exemptions
Exempted students have an A.A./A.S. or higher degree or have completed transfer-level English and math courses. Documentation must be provided.

Exempted students are not required to participate in any matriculation services. However, they may choose to participate in any or all of these services.

Students have a right to refuse matriculation services. In choosing to do so, students must complete and sign a Matriculation Refusal Form available at the Admissions and Records counter. Students refusing the matriculation process will not be able to register for classes until the last group registration.

The Assessment Process
Students new to Merced College or who have not completed transfer-level English and math courses should participate in the assessment process. Assessment instruments are used as an advisory tool to assist in identifying skill levels in English and math, and also in the selection of an educational program. Scores are advisory only. Counselors can discuss the scores and other relevant personal and educational information to help determine course selection. Course placement will be based on the placement range and other multiple measures, such as recent academic history.

Students pursuing an associate degree will have English and math requirements and should begin to fulfill these requirements as early in their college career as possible.

Goals of the assessment process are:
- To assist in determining which student and instructional services are needed to support admission and ongoing enrollment in the College;
- To assist in determining a student’s level of proficiency in the areas of reading, writing, and mathematics so that placement into course work is appropriate to one’s goals;
- And to assist in determining one’s career goals so that realistic and purposeful educational planning will be provided, and if one is undecided, the opportunity to participate in course work whose focus is career decision-making.

Except in rare circumstances when approved by a counselor, students are not allowed to retake assessment tests until the subsequent semester of enrollment. Once a student has begun a math or English course, assessment tests cannot be retaken.

Alternate assessment processes are provided to students with limited English proficiency or disabling conditions which may require accommodation. Contact the Assessment Technician at (209) 384-6089 for information.

Transfer Students
Students transferring from another college must submit a transcript for evaluation. Transcripts submitted to Merced College become the property of Merced College and cannot be returned or forwarded to another institution.

Counseling & Course Advisement
Students wishing to register in college course work with a prerequisite not completed at Merced College must meet with a counselor or advisor for approval. The counselor can help determine one’s preparedness for courses, determine whether one has met prerequisites, and, when appropriate, assist with the preparation of a “prerequisite challenge” (see below).

These sessions can also provide information regarding helpful College resources and support services and allow counselors to make recommendations regarding the number of units one should consider taking given work/life obligations. Counselors can also advise students on other personal, social, educational, and career-related issues which may interfere with their course of study.

Are You Eligible for a Course?
Prerequisites and Corequisites
Merced College provides you with a wide variety of academic assistance and personal support, but it is up to you to know when you need help and to seek it out. It is your responsibility to keep informed and to obey campus rules, regulations and policies that affect your academic standing as a Merced College student. Meeting deadlines, completing prerequisites and satisfying the degree and certificate requirements, as found in this catalog, are all part of your responsibility as a student.
In both the college Catalog and the Schedule of Classes, skills are listed in the form of prerequisites, two types of corequisites, limitations on enrollment, and advisories. These skills are normally given in the form of a course, the successful completion of which will provide students with the necessary skill(s). A definition of each of these terms is listed below:

Prerequisite
This represents a set of skills or a body of knowledge that one must possess prior to enrolling in a course. Without these skills a student will unlikely receive a satisfactory grade in the course or succeed in the program. Students will not be permitted to enroll in these courses and programs without the prerequisite.

One-way Corequisite
This represents a course whose content is dependent on a main course; however, the contents of the main course can stand alone. These courses do not necessarily need to be taken during the same semester.

Two-way Corequisite
These are paired courses that are part of the same sequence and must be taken during the same semester.

Limitation on Enrollment
This is an audition or try-out requirement associated with public performance or intercollegiate competition, honors courses, or blocks of courses intended for a cohort or group of students (such as a nursing program).

Advisory
This is a course, skill, or status which is strongly recommended but not required. Students with the advised skill will probably have a better understanding of the course material.

The most common way of satisfying a required or advised skill is by completing the prerequisite course with a grade of “C” or better. Those wishing to enroll in a course with a prerequisite and who have not completed the prerequisite course with a grade of “C” or better should refer to the challenge process below.

For Major: Course substitution: Paperwork will be submitted to the discipline faculty for approval. Approval requires the signature of two faculty members in the discipline and the division dean.

For Competency: General Petition: Paperwork will be submitted to the Academic Exceptions Committee (AEC) for approval. Approval requires the signature of a discipline faculty member for the competency requested and the chair of the AEC committee as well as the Dean of Student Services.

General Education Breadth: General Petition: Paperwork will be submitted to the Academic Exceptions Committee (AEC) for review. Approval requires the signature of the chair of the AEC committee as well as the Dean of Student Services.

The decision of the faculty is final; no appeal is available.

Challenging a Prerequisite
Students who believe they have met the requirements (or if one of the conditions below exists) may challenge a prerequisite. A challenge petition can be obtained from the Counseling Office.

1. Believe they have the knowledge or ability to succeed in the course but have not completed the pre- or corequisite;
2. Believe that, although not having met the health or safety pre- or corequisite, feel don’t pose a threat to themselves or others;
3. Believe they will be subject to undue delay in reaching the goal of their educational plan because the pre- or corequisite course has not been made reasonably available, or the course has been limited to a special group of students and there are no other courses which would fulfill the requirement.
4. Believe that the pre- or corequisite was established in violation of Title 5 regulations or in violation of district-approved policies;
5. Believe it is unlawfully discriminatory or is being applied in an unlawfully discriminatory manner.

Supporting documentation MUST be attached to all challenges submitted. Challenges may be filed at anytime during the registration period. Upon completion of the challenge procedure, the challenge will be reviewed and the student will be advised of the determination within five working days. For more detailed information on the challenge process, call the Guidance Division at (209) 384-6314.

Registering for Courses
All students in good standing may register for classes within their assigned priority registration group either online through WebAdvisor, which can be accessed through the Merced College Portal at https://mc4me.mccd.edu or in person at either the Merced or Los Baños campus Admissions and Records office.

Priority in registration is given per Board Policy BP5055 and Administrative Procedure AP5055. Registration for new and former students usually begins in April for the summer and fall semesters and in October for the spring semester. New and former students must complete an admissions application and have an identification card prepared before processing their registration forms, and prior to attending the assessment appointment.
Registering Late
From the first day of the semester through the end of the third week of the semester, students may add into a class by obtaining the instructor’s signature on a schedule request add form. Many Merced College classes have waitlists for classes that have full enrollment. Instructors will add from the list of waitlisted students first. Because the College can lose the funding for education when students register late, beginning with the fourth week of instruction, students must also obtain the approval of a dean of instruction. This is known as the later registration period.

English and Math Requirements
Those pursuing an associate degree will have English and math requirements and should begin to fulfill these requirements as early in their college career as possible. (See also Computer and Information Literacy under Competency Requirements.)

Some Courses Have Laboratory Requirements
Some courses, such as anatomy, biology, chemistry, and child development, require lab sections in addition to lecture sessions. Students must register in both the lecture and the lab section for these courses at the time of registration.

Some Programs Are Restricted
(Limitations on Enrollment)
The following programs require additional criteria: Certified Nursing Assistant, Home Health Care Aide, Licensed Vocational Nursing, Radiologic Technology, and Registered Nursing.

For more information, speak with an Allied Health counselor in the Guidance Center (209-384-6478) or contact the Allied Health Division Office (209-384-6371).

Safety in Allied Health Programs
Programs offered by the Allied Health Division that result in certification or licensure in health occupations include required courses of clinical training conducted at clinics, hospitals, and other patient care treatment centers. Students enrolled in clinical training settings are expected to maintain standards of practice that ensure the safety of clients and personnel in the clinical agencies. Safety is defined as meeting the objectives of a course in the times designated for each objective and to the degree of mastery designated.

A student will be dismissed from clinical training courses for unsafe behavior related to the objectives for the course in which currently enrolled, or to the objectives of previously completed clinical laboratory courses.

Requirements for Athletics Courses
Merced College is a member of the Central Valley Conference (CVC) as authorized by the California Community College Athletic Association (CCCAA). Other Conference schools: College of the Sequoias; Columbia College; Fresno City College; Reedley College; Porterville College; Taft College; and West Hills College. The CCCAA establishes rules of student-athlete eligibility and assigns “host” conferences when necessary. Eligibility to compete must be confirmed prior to student-athlete participation.

Merced College offers competition in the following sports: men’s football, water polo, basketball, baseball, swimming, and track & field; women’s volleyball, water polo, basketball, softball, swimming, and track & field

To participate in varsity competition, a student-athlete must adhere to CCCAA rules for athletic eligibility. These include:

1. Regular attendance, beginning no later than four weeks after the beginning of the semester.
2. Active enrollment in at least 12 units during the season of sport, nine of which counts toward remediation, degree, or certificate.
3. Completion of at least 24 units with a minimum 2.0 GPA from the beginning of the first semester of competition to the beginning of the second.

Regulations are subject to change by the CCCAA legislative process.

Minimum and Maximum Unit Load
Students should plan to enroll in 15 units of course work each semester to earn a degree or certificate in a timely manner.

Those wishing to enroll for more than 19 units in a regular semester or 8 units in a summer session must have completed a college term of at least 15 units with a minimum 3.5 GPA. A request for excess units must be approved by the dean of Student Services.

To qualify for one of the categories listed below, students must carry a minimum course load in a fall or spring semester as follows:
- Full-time Student: 12 units per semester.
- International Student: 12 units per semester.
- Work-Study Student: 12 units per semester.
- Social Security, California State Disability, and P.L. 674 Students: 12 units per semester.
- Military Benefits: Full-time (12 units per semester); three-quarter time (9 units) half-time (6 units).
- Student Body Officer: 12 units per semester.
- Varsity Athlete: 12 units, and P.E. if required.
- Cooperative Education: Total of 7 units per semester.

There is a Limit on Nondegree-Applicable Basic Skills Courses
Students are limited to a total of 30 units in non degree-applicable basic skills courses (i.e., courses that are not college-level). Students who have completed a total of 26 units of non degree-applicable basic skills course work, excluding ESL courses, must apply for a waiver of the 30-unit limitation to continue in remedial course work. Petitions and procedures are available at the Admissions and Records office.

Student Progress Monitoring
Merced College monitors the academic progress of its students and communicates this information to enrolled students. Each term students fail to make satisfactory progress (2.0 GPA) they are placed on probation, as are students who have withdrawn from more than 50 percent of the courses in which they have enrolled. Students on probation may have additional restrictions placed on them.
Auditing a Course
Students can audit a course only if there is space available in the class and with the instructor’s permission. Any prerequisites established for the course must be met.

Students can register to audit a fall or spring full-term course after the first week of instruction, or for a short-term or summer session course after the second class meeting. The per-unit fee for auditing is charged unless one is enrolled in at least 10 units at the time of applying to audit a class. Students are already enrolled in at least 10 units may audit up to three units free of charge. The audit fee is non-refundable.

Once enrolled as an auditor of a course, a student may not enroll in that course for credit during the same semester, and may audit a course only once. An audited course will not be posted on one’s permanent academic record; however, as an auditor, students will be expected to attend regularly and may participate in class activities, take examinations, and write papers with the instructor’s consent.

If a student is enrolled only as an audit student will have restricted use of some College facilities and services. Although use of the library is permitted, audit students may not check out library materials, have access to the library’s periodicals or any instructor materials placed on reserve. There will be restricted use of Student Health Services and there will be no access to the College’s Employment Referral Service.

Changing Your Schedule
Adding a Fall or Spring Class
To add a class, obtain a Schedule Request form in the Admissions and Records Office. Fill in the Course Registration>Adds section. Students are required to obtain a counselor’s signature if on probation or if trying to register in a course which has a prerequisite. Also, if a student is not currently enrolled in the prerequisite or if he/she has not successfully completed the prerequisite at Merced College.

From the first day of the semester through the end of the third week of the semester, students may add into a class by obtaining the instructor’s signature on a schedule request add form. Many Merced College classes have waitlists for classes that have full enrollment. Instructors will add from the list of waitlisted students first. Because late registering students may be unable to succeed due to missing instruction time, beginning with the fourth week of instruction, students must also obtain the approval of a dean of Instruction.

Dropping a Fall or Spring Class
It is the student's responsibility to drop any class that they do not intend to complete. Classes may be dropped at any time a student is eligible for registering.

If a class is dropped within the first three weeks of an 18-week course, it will not appear on the student’s permanent record. A grade of “W” will be placed on the student’s permanent record for classes dropped after the third week and before the end of the fourteenth week of a regular semester. (See “withdrawal” in the section on grading.) Classes dropped after the fourteenth week will be given a letter grade of “FW.”

Instructors may, but are not required to, initiate class drops if a student has not attended class or if attendance has dropped below standard (see Attendance Policy). If dropped by the instructor, students will receive a permanent record entry based on the above time periods.

Adding and Dropping Summer Classes
Adding a Class: From the first day of the semester through the end of the first week of the semester students may add into a class by obtaining the instructor’s signature on a schedule request add form. Many Merced College classes have waitlists for classes that have full enrollment. Instructors will add from the list of waitlisted students first. From the beginning of the second until the end of the third week, students can add a class with the approval of the instructor and the dean of Instructional Services. Classes will not be added after the third week.

Dropping a Class: Classes dropped during the first week of classes will not be shown on permanent records. For the second through the fifth week, a “W” - withdrawal - will be recorded on the student’s permanent record. After the fifth week, students will receive a grade of “FW.”

If You Withdraw from the College
Total withdrawal from the College is a student responsibility and can be accomplished by completing the Course Drops section of the Schedule Request form in Admissions and Records office for all of your classes. All outstanding debts owed to the College must be paid and all books or other materials on loan from the College must be returned.

Tuition, Fees, and Refunds
A California State enrollment fee is charged per unit for all students. This enrollment fee is subject to change by the State Legislature. Enrollment fees are due at the time of registration.

For non-resident students, this enrollment fee must be paid in addition to the non-resident tuition fee. (See Residency and Tuition below.)

The cost of textbooks and supplies needed for courses is dependent upon the selected courses and may vary widely. Textbook lists all information and prices are posted at the Bookstore web site at www.mercedcollegebookstore.com prior to any registration period.

IT IS THE STUDENT’S RESPONSIBILITY TO REQUEST A REFUND. REFUND APPLICATIONS ARE AVAILABLE FROM THE STUDENT FEES OFFICE.

Listed below are the various student fees, charges, and the refund policy for each. Fees may be charged or changed without notice.

REQUIRED:
- California State Enrollment Fee: $46 per unit
- Non-resident Tuition: $208 per unit ($208 for summer), plus enrollment fee. Tuition charges are subject to change beginning with the summer session each year.
- International Student Insurance: Approximately $600 per year is required; other insurance plans may be acceptable.

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Refund Policy: Refunds are in accordance with the insurance company’s policies.

- Health Fee*: $17 per semester ($14 for summer) which includes campus accident and injury insurance coverage; community resource information, basic health and wellness services and information; short term personal counseling services.

*Ed. Code Section 76355 allows an exemption from the Health Fee solely to those Students meeting the following criteria:
1. Indentured apprentice enrolled in apprenticeship classes only
2. Those who depend exclusively on prayer for healing (appropriate documentation must be filed)
3. Those who are surviving spouses of members of the California National Guard who were killed or prematurely disabled while in the active service of the United States (appropriate documentation must be filed)

Please contact The Student Fees Office for more information.

ADDITIONAL:
- Associated Students of Merced College member fee: $10 per semester (no fee for summer).
- Transcript Fee:
  The first two transcripts are free; additional copies are $5 each. Please allow 10 working days from the receipt of your request. Next business day service may be available for pick-up or mailing for an additional charge of $10, but certain restrictions apply. Call (209) 384-6193 for more information.
  Refund Policy: No refund available.
- Parking Fee:
  $20 per auto ($10 for summer) per semester or $1 per day.
- Child Care:
  As arranged per child by semester contract.
  Refund Policy: If services are cancelled with a two-week notice, a refund may be obtained for the remainder of the contract.
- Auditing Fee:
  The per-unit fee for auditing is charged unless students are enrolled in at least 10 units at the time they apply to audit a class. Students already enrolled in at least 10 units may audit up to three units free of charge. The audit fee is non-refundable.
- Return Check/Stop Payment Fee:
  $30 per returned item.
  Refund Policy: No refund available.
- Subpoena Fee:
  $15 per request.
  Refund Policy: No refund available.
- Duplicate Diploma Fee:
  $10 per request.
  Refund Policy: No refund available.

Refund Policy
The general refund policy covers the following fees: enrollment fees, state health fees, parking fees, student body fees, student representation fees, and non-resident tuition.

Students may apply for a refund if withdrawing from courses within the first two weeks of a full semester (18-week) course or, in the case of non 18-week courses, before 10 percent of the class meetings have passed.

After the second week of a full-semester course, or after 10 percent of the class meetings have passed on a non 18-week course, no refunds are available. Any additional classes added after the first two weeks will incur a financial responsibility.

Outstanding Debts Owed to the College
Students owing an outstanding debt to the College will have a hold placed on their academic records at the Admissions and Records office. Services that the College normally provides, such as registration, ordering transcripts, or the issuance of diplomas (and possibly other services) will not be available except in certain extenuating circumstances.

Ordering transcripts and the issuance of the diploma will be withheld until the student clears the hold by paying in full. A student’s ability to register will be reinstated after having paid in full or setting up a payment plan with the College. To pay in full or arrange a payment plan, contact the Student Fees Office at (209) 384-6219 (Merced) or (209) 826-3431 (Los Baños). Credit card payments can be made online at www.mccd.edu.

Residency & Tuition
Establishing California Residency
To avoid paying non-resident tuition, you must have resided in California for at least one year and one day prior to the opening date of the semester or summer session in which you are enrolling. You must also have satisfied at least three acts of intent prior to the one year and one day waiting period. These acts may include, but are not limited to, obtaining a California driver’s license, registering a motor vehicle in California, registering to vote in California, owning California property, or having one’s belongings in California. You must also show evidence that California income taxes have been or are being paid (unless you are on public support). Information regarding California residency may be obtained in the Office of Admissions and Records.

If you do not qualify for California residency, you must pay non-resident tuition.

To Be Reclassified as a Resident
Upon completion of the one year and one day requirement and being previously classified as a non-resident, students may obtain the forms from the Office of Admissions and Records for reclassification as a California resident. Reclassification has the additional requirement of financial independence from parents if they are non-California residents.

Military Waiver of Non-resident Tuition
Members of the U.S. armed forces on active duty in the State of California (and have not been assigned to California for educational purposes) are exempt from non-resident tuition. There is no requirement to establish California residency; however, one must be on active duty at the time they are admitted to the College to qualify for this waiver. Upon separating from the military, the student will be required to provide evidence of intent to establish residency in California at least one year prior to the admittance date.

Dependents of non-resident military personnel are entitled to an exemption from non-resident tuition until they have established residency as stated in “Establishing California Residency” above.
Residency Status for Refugees and Undocumented Aliens

New arrivals from countries approved for refugee status must reside in California one year and must hold an I-181 or an "Alien Registration Card" (green card) before applying for residency status.

Refugees not meeting the above requirements will be considered a nonresident and must pay nonresident tuition. Eligible California high school graduates may qualify to pay resident tuition under the California Nonresident Tuition Exemption law (AB 540).

The California Community College Chancellor's Office has ruled that undocumented aliens are to be classified as non-residents.

International Students

It is the philosophy of Merced College to encourage the attendance of international students to enrich and broaden the educational experiences of all students. With this philosophy as a basis, the Merced College International Student Policies encompass the following guidelines:

- A maximum number of international students equal to 5 percent of the previous year's full-time equivalent enrollment may be admitted to Merced College.
- Discretion is used in selecting applicants to ensure that there is a balance of international students from various countries of the world.
- International student eligibility is based on meeting the application requirements and English language proficiency (TOEFL 450) by the semester deadline.
- Upon acceptance to the International Student Program, a student is issued an I-20 immigration form that enables the student to apply for his/her student visa.

To apply for admission under the International Student Program, write to the Program Assistant requesting an application (there is an application fee). Once admitted to Merced College as an international student, non-resident tuition plus state enrollment fees must be paid. Financial aid is NOT available to international students. By the census date of each class fees are due in full or a payment plan must be set up. Fees must be paid in U.S. currency.

Attendance & Grading

Attendance Policy

Regular attendance and consistent study are the two factors which contribute most to success in college work. College students are expected to attend all sessions of the classes in which they are enrolled. Failure to attend class can result in a lower grade or in being dismissed from a class.

Priority in a class is established at the time of class registration. Registering for and failing to attend the first class meeting will forfeit any priority in that class and students may be dropped from the roll in order to accommodate other students wishing to register in the class.

If, in the opinion of the instructor, a student's absences in a specific class would prevent the successful completion of the course requirements, the student may be dropped from the class. In the event of extenuating circumstances such as a verified illness, accident or conditions beyond your control, the instructor may allow the student to continue under special arrangement.

Grade Scale

In a course of instruction for which grades are awarded, the instructor of the course will determine the grade assigned using the following grade scale:

<table>
<thead>
<tr>
<th>Symbol Definition</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Excellent</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>D</td>
<td>Passing, less than satisfactory</td>
</tr>
<tr>
<td>F</td>
<td>Failing</td>
</tr>
<tr>
<td>FW</td>
<td>Failing, stopped attending</td>
</tr>
<tr>
<td>P</td>
<td>Pass - performance equivalent to a grade of &quot;C&quot; or better</td>
</tr>
<tr>
<td>NP</td>
<td>No Pass - performance equivalent to a grade of &quot;D&quot; or &quot;F&quot;</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete academic work for justifiable reasons at the end of a term</td>
</tr>
<tr>
<td>W</td>
<td>Withdrawal from the class and/or College</td>
</tr>
<tr>
<td>IP</td>
<td>In Progress - a class was extended beyond the normal end of the academic term and assignment of a substantive grade must await completion of the class</td>
</tr>
<tr>
<td>RD</td>
<td>Report Delayed - a temporary notation recorded when there is a delay in reporting a grade</td>
</tr>
</tbody>
</table>

The non-evaluative grading symbols above (marked as "N/A" - not applicable) are not used in the calculation of GPA (grade point average).

Assigning and Removing a Grade of Incomplete

A written record containing the conditions for removal of the "I" is to be completed by the instructor at the time that grades are submitted to the Admissions and Records office. If the conditions for removal are not completed after one semester, the grade to be assigned must be part of this record. A copy of the written record will be given to the student and one will be filed with Admissions and Records.

The required work will be evaluated and a final grade will be assigned if the student meets the conditions within the one semester allowed. Students may petition for a time extension due to unusual circumstances.

Taking Courses on a Pass/No-Pass Basis

Students are allowed to earn a maximum of 12 units attempted on a pass/no-pass basis. There are certain courses in which all students are evaluated on a pass/no pass basis only. These courses are specified in the course description in this catalog. All courses other than those included in the category above are available for the pass/no-pass option; however, courses specifically required for one's degree or certificate should not be taken with this option.

Units earned on a "P/NP" basis are not used in the calculation of the GPA; however, when receiving an "NP," the units for that
course will be counted as units attempted and considered in probation and dismissal procedures. One may repeat a course in which an “NP” was received. (The repeated course will not be counted as units attempted.)

Students selecting the pass/no-pass option and later wishing to receive the letter grade which was filed with the Registrar must submit the grade request form no later than one regular semester following the semester in which received the “P” was received. Course units converted from pass/no-pass to a letter grade will not be counted in the 12 allowable pass/no-pass units, but will be used in the calculation of the GPA.

Grade Changes
The instructor of the course shall determine the grade to be awarded to each student. The determination of the student's grade by the instructor is final in the absence of mistake, fraud, bad faith, or incompetence. The removal of an incorrect grade from a student's record shall only be done upon authorization by the instructor of the course, with the following two exceptions: 1) If the instructor is no longer employed by the District and compelling evidence is available that there was a simple error in the grade submitted, the vice president of Student Personnel OR vice president of Instruction may change the grade; 2) If mistake, fraud, bad faith, or incompetence are present, the final determination concerning removal or change of grade will be made by the Board of Trustees based on the recommendation of the Superintendent/President.

Students who believe that a grade is incorrect should obtain a "General Petition" form from the Admissions and Records Office. All requests for a grade change, for both evaluative (A,B,C,D,F,FW) and non-evaluative grades (W), must be made in writing within two years of the last day of the semester in which the grade in question was earned.

Repeating a Course
Course Repetition for Grade Improvement
In an effort to alleviate substandard academic work, a student may repeat courses in which they have received sub-standard grades of “D”, “F”, “FW”, “NP” or “NC” by re-enrolling in the course(s). Students may repeat courses in this way for a total of three attempts. A withdrawal that results in a “W” on the transcript counts as one attempt to improve a grade. One additional attempt may be allowed if the College finds there are documented extenuating circumstances which justify another repetition. A petition must be submitted along with documentation supporting the circumstances relating specifically to the dates of the last attempt. Extenuating circumstances are verified cases of accidents, illness or other issues beyond the control of the student.

Course Repetition When the Student Has Earned a Passing Grade
Students may take a course once and then repeat it as many times as is stated in the course description in the catalog. After receiving a grade for a course, subsequent enrollments in that course that result in a withdrawal with a “W” count as a repetition attempt.

For courses that are not repeatable in which a student has received a satisfactory grade, i.e., “A”, “B”, “C”, “CR”, or “P” may not be repeated unless the Academic Exceptions Committee approves a Petition which:
1. Demonstrates a significant length of time has elapsed since the course was taken (five or more years), or for other substantial reasons.
2. Demonstrates that repetition is necessary for a student to meet a legally mandated training requirement as a condition of continued paid or volunteer employment.

After repeating a course the following changes will appear:
- If the grade received in the original course was sub-standard, an “R” will appear in the notes column to the right of the original course. The original grade will not be used in computing the GPA. The grade received in the approved repeated course will be posted to the transcript and used for GPA purposes.
- If the grade received in the original course was satisfactory, both the grade received in the approved repeated course and the original grade will be used for purposes of GPA calculation. (State regulations do not allow “W” grades to be removed or lined out.)

Withdrawal
Withdrawal from a course or courses shall be authorized through the last day of the 14th week of instruction (or 75 percent of a term, whichever is less). The academic record of a student who remains in a course beyond the time allowed by district policy must reflect a symbol as authorized other than a “W.” No notation (“W” or other) shall be made on the academic record of the student who withdraws during the first four weeks or 30 percent of a term, whichever is less.

Students may attempt a course a maximum of 3 times including withdrawals where a “W” symbol is recorded.

Students have the right to file a petition if they believe they either should or should not receive a “W” or wish to enroll in a course where they have exceeded the maximum number of “W”s due to extenuating circumstances.

Academic Renewal
If a student receives a sub-standard grade (“D” or “F”) the student can petition to disregard this course for purposes of calculating GPA. (Title 5 Sections 55044 and 55046)

Students may petition to have their academic record reviewed for academic renewal of substandard academic performance under the following conditions:
- Students must have achieved a cumulative grade point average of 2.0 since the term in which the substandard grade(s) to be removed was/were earned. The courses used in this GPA calculation must be from an accredited institution and total at least 12 units; and
- At least one regular semester must have elapsed from the time the course work to be removed was completed.

Up to 12 units of course work may be eliminated from consideration in the cumulative grade point average.

When academic renewal procedures permit previously recorded substandard coursework to be disregarded in the computation of a student’s grade point average, the student’s permanent academic record should contain an accurate record of all coursework to ensure a complete academic history. Academic renewal procedures may not conflict with the District’s obligation to retain and destroy records or with the instructor’s ability to determine a student’s final grade.
Other Means of Obtaining College Credit

Merced College recognizes and fully participates in awarding student credit for those programs listed below. A maximum of 30 credits may be earned from the combined use of these programs. In addition, credits earned from these programs may not be counted toward the satisfaction of prerequisite courses, and also may not count toward a Merced College degree major. Students are encouraged to consult their counselors in these matters. Advanced Placement (AP)

Advanced Placement (General Examination)

Merced College participates in the Advanced Placement (AP) Program offered by the College Entrance Examination Board. A score of 3, 4, or 5, is required, depending upon the specific exam. Not all AP examinations are identified for credit.

Information about the awarding of credit by the specific AP exam and the application for Merced College Associate Degree Breadth, CSU General Education - Breadth, and IGETC is provided in the section entitled AP EXAMINATIONS.

C.L.E.P.

Merced College will award credit under the College Level Examination Program (C.L.E.P.) in accordance with the standards adopted by the California State University System. Credit for Subject Matter exams is based on the scores recommended by the American Council on Education (ACE). The number of units of credit granted varies. See a college counselor for additional information.

Credit by Examination

Student registered at the college and in good standing are eligible to apply for credit by examination.

No credit by examination will be offered if a student has previously taken the class and received any grade other than a “W.” The number of courses available for credit by examination may be limited by the discipline faculty. Information about course availability may be obtained in the Guidance Area or with the Area Dean for the program each semester. Although the University of California and Academic renewal actions are irreversible, the California State University and colleges accept, with certain limitations, appropriate credits obtained by examination. There is no guarantee by Merced College that other institutions will do so. Students may be asked to supply a high school and other college transcripts when applying for a credit by examination. The grade obtained through credit by examination will be recorded on the transcript with a descriptor CE (credit by exam). Students will pay a credit by exam fee equal to the enrollment fee required if registering for the course.

Credit for Military Experience

After earning 12 units of credit in residence at Merced College, military veterans will be awarded up to 12 units of credit for military training and experience. These units will be recorded on the student’s Merced College transcript. This award will be based upon the American Council of Education’s (ACE) recommendations found on the individual’s ACE Registry Transcript. The bases for awarding credit for military training and/or experience are as follows:

Basic Training

The student will receive two units of credit in Physical Education.

Other Military Training/Experience

Merced College will grant a maximum of 10 units of general elective credit.

Transcripts from other accredited institutions of higher education will be evaluated and credit will be granted according to standard college procedures. (NOTE: Community College of the Air Force transcripts of Air Force veterans will be evaluated in this manner and will not be subject to the above unit limitations and residency requirements.)

Students seeking credit for specific Merced College courses based upon military training and/or experience must apply for credit by examination. See Credit by Examination for additional information.

Students seeking to use military training and/or experience in lieu of stated prerequisites must challenge the prerequisite using the standard college process. See Challenging a Prerequisite for additional information.

Probation & Dismissal

Academic Probation

Students will be notified of having been placed on academic probation if they have attempted at least 12 units and earned a grade point average below 2.0 based on all units recorded on their permanent record. A student's probation status is not affected by a break in attendance.

Students will be removed from academic probation when their cumulative GPA is 2.0 or higher.

Students on academic probation will be subject to dismissal from the College if they’ve earned a cumulative grade point average of less than 1.75 in all units attempted in each of three consecutive semesters.

Although units accumulated during a summer session are used in the GPA calculation, the probation status changes only at the end of a regular semester when grades are recorded.

For specific information regarding the impact of academic probation see Administrative Procedures AP 4250 and AP 4255.

Progress Probation

Students will be placed on progress probation if they’ve enrolled in at least 12 units and the entries on their permanent record of “W,” “I,” and/or “NP” reach 50 percent of the cumulative units or more. The probation status is not affected by a break in attendance.

Students will be removed from progress probation when the percentage of units graded as “W,” “I,” and “NP” drops below 50 percent in this category.

Students placed on progress probation will be subject to dismissal from the College if the entries on their permanent record of “W,” “I,”
and/or “NP” reach 50 percent of the cumulative units or more for three consecutive semesters.

Although units accumulated during a summer session are used in the GPA calculation, the probation status changes only at the end of a regular semester when grades are recorded.

For specific information regarding the impact of progress probation see Administrative Procedures AP 4250 and AP 4255.

**Dismissal Notification**
Students who have been dismissed from the college will be notified by e-mail.

**Probation and Dismissal Appeal**
A student may appeal probation or dismissal provided that unusual and verifiable circumstances occurred that were strongly instrumental in leading to the probationary or dismissal status. Reasons for appeal might include: 1) one’s health; 2) an emergency in one’s family; or 3) an extreme change in financial situation which did not allow the student to continue your education. Other reasons not listed above may also be considered.

**Your Right to Grieve**
Merced College supports students’ right to grieve or appeal any official action or incident which, in their judgment, is unfair or prevents them from obtaining equal educational opportunities. Board Policy and administrative procedure AP 5530 provides information about conditions under which students may grieve and the process to be followed.

In cases of action, such as dismissal from a class, program, or the College, students can initiate an appeal according to a specific appeal channel. If a student wishes to exercise the right to appeal an action taken against them by a College official, the student should contact the vice president of Student Personnel regarding the proper procedure to be followed.

In cases of incidents such as alleged discrimination or harassment, students can initiate a grievance. To exercise the right to grieve such an incident, students should contact the College’s Equal Employment Officer regarding the proper procedure to be followed.

**Student Right to Appeal Petitions**
When a student’s petition is denied by the Academic Exceptions Committee, the student has the right to appeal to the Dean of Student Services. An appointment is required by calling (209) 384-6077.
Air Force Reserve Officer Training (AFROTC)

Students may take AFROTC courses for academic credit with no commitment to the Air Force. For academic credit, a student may take the courses as electives to learn more about national defense, airpower strategy, the Air Force lifestyle, and Core Values. Students can register for classes through Fresno State's extension program. If a student wants to take the courses as a lead-in to a commission as an Air Force officer, he/she must eventually join the cadet corps to prepare to enter active duty as a second lieutenant. Merced College students, who wish to pursue commissioning as cadets, and not just as students, must be full-time students with at least 12 credit hours per semester and maintain a 2.0 CGPA. They must also be accepted to Fresno State by their junior year in order to complete the commissioning path. In either case, a student or cadet can use the theory and skills learned in Aerospace Studies as leadership experience that will be invaluable for either an Air Force or civilian career. Books and supplies are provided at no cost to the student; uniforms will also be furnished for qualified students at no costs.

For more information, contact California State University-Fresno, AFROTC at (559) 278-2593 or visit www.csufresno.edu/afrotc.

Art Gallery

The Art Gallery, located in the Theater Building, presents high quality art exhibits in a wide variety of media throughout the school year for enjoyment and enrichment. Featured shows include student, faculty and guest artist exhibits. All art gallery events are free and open to the public. Art exhibitions are often scheduled in conjunction with theater events. For a schedule of Art gallery events, please visit http://www.mccd.edu/TheArts/ or call 386-6644.

Associated Students

Student Government – Dedicated to improving student education, life and experiences!

Associated Students of Merced College (ASMC) is a student government organization. The mission of ASMC is to provide students with representation and advocacy on campus. ASMC is led by a nine-member Student Executive Board who are elected by students each year.

Under the guidance of a faculty advisor, ASMC works to:

- Advocate for the inclusion of students in the overall policy and decision-making processes of the college, especially as it relates to institutional effectiveness. This includes participation in the program review and the student learning outcome/service area outcomes process.
- Promote awareness of the student’s role in the academic community
- Enhance the quality and scope of education at the college, both inside and outside the classroom
- Schedule activities to enhance student life at Merced College

- Empower students with leadership opportunities

ASMC represents student interests to a variety of audiences, including: college administration, faculty, staff and the Board of Trustees. Members participate in shared governance by serving as representatives on major college committees. ASMC is also a member of Region V of the Student Senate for California Community Colleges (SSCCC) and California Community College Student Affairs Association (CCCSAA).

During the Fall and Spring semesters, ASMC holds open council meetings every Tuesday at 02:00p in the Student Union Building, Room 137. Students and members of the community are encouraged to attend and share ideas, concerns and/or comments with the governing council. The council does not meet the first week of the semester, during finals weeks, or during summer or winter breaks. In accordance with the Brown Act, agenda items must be submitted in writing before 12:00 noon on the Thursday before the intended meeting. Agendas will be posted in the window of the ASMC Office on Thursday afternoons. Action items may not be added to the agendas after the deadline.

Merced College
Associated Students of Merced College
3600 M Street
Merced CA 95348
Phone: (209) 384-6119

ASMC Membership and Fee

To be an ASMC member, a student must be registered for the current semester and pay the $10 ASMC member fee at the cashier’s office. Members will be provided a discount card (for use at select restaurants and businesses) and a sticker to place on their student ID card. A $10 replacement fee will be charged for lost ASMC stickers.

ASMC Member Benefits and Privileges:

- Right to seek office within student government
- Discount admission to college athletic and theater events, and all ASMC sponsored activities
- Eligibility to apply for ASMC scholarships
- Membership in student clubs
Bookstore
The Merced College Bookstore is located in the Student Union Building on the Merced Campus and in Building A at the Los Baños Campus. The bookstore offers a textbook rental program in the store or online, and students can reserve new and used textbooks online, new and used textbooks, paperbacks, study aids, art materials, nursing supplies, stationery, collegiate apparel and other supplies. We buy back textbooks each semester during finals week. Special orders and custom orders are welcomed. Regular bookstore hours are from 07:45a to 03:00p Monday through Friday, and from 05:45p to 07:15p Monday through Thursday. Extended business hours are offered during the beginning of each semester. Shop online at www.mercedcollegebookstore.com for textbooks for both Merced and Los Baños Campus.

Career/Transfer Center
Los Baños Campus students should call (209) 381-6424 for information at the Los Baños Campus.

CalWORKs Program
Education that WORKS!
California Work Opportunity and Responsibility to Kids (CalWORKs) is a state funded welfare-to-work program designed to help individuals on public assistance (TANF), TANF stands for Temporary Assistance for Needy Families, a cash aid program (welfare) for parents who meet income guidelines and have a child at home under the age of 18.

CalWORKs staff provides customized support services during the student's educational and employment journey toward self-sufficiency. For more information, contact: Merced College (209) 381-6515 or Los Baños Campus (209) 381-6428, or visit www.mccd.edu/organizations/student/asmc.html

Campus Dining
Complete meals, soups, sandwiches, pizza and snacks at competitive prices can be purchased in the college's attractive cafeteria located in the Student Union Building. The Campus Café also provides on-site affordable customized catering for small to large luncheons and BBQ. See the catering menu at www.mccd.edu and click on services, or call (209) 381-6549

Career/Transfer Center
The Career/Transfer Center provides services to assist individuals in making occupational and educational decisions. Included in these services are:
- Career search software with information on hundreds of occupations and training programs;
- A resource center for career information material;
- Career interest testing to help students determine occupational and educational goals;
- Counseling services and current information on transfer programs which include Transfer Admission Agreements and articulation agreements on various majors and general education requirements;
- Contact with four-year colleges and universities including scheduled on-campus visits by representatives, college fairs, and transfer workshops;
- A library of college catalogs including the UC, CSU, and community college systems and many independent institutions;
- Assistance completing UC and CSU applications;
- Career Counseling services to help determine your major and/or career path.

The Career/Transfer Center is the college’s career and college information and resource center. Students planning to transfer are encouraged to visit the center as early as possible. The Career/Transfer Center is open during the fall and spring semesters from 08:00a. to 04:30p. Monday through Friday, and Wednesday evenings until 07:00p. Summer hours will vary. Call (209) 384-6243 for Career Services or (209) 384-6239 for Transfer Services.

Child Development Center
Child Development Center services are available on campus for the children of students, staff, and community members. The program is an infant/preschool educational program and serves as a laboratory for students majoring in Child Development. A charge is levied for this service; however, if you qualify, financial aid is available. Applications are available on the CDC website and at the Child Development Center.
www.mccd.edu/services/child_dev

College Clubs
With more than twenty clubs, it's easy to find people who share similar interests!

This is your open door to Merced College and we want to get you connected. Associated Students of Merced College (ASMC) recognizes more than twenty student clubs and organizations on campus representing a broad range of interests. Feel free to attend their meetings; they’re always looking for new members.

The role of campus clubs are to:
- Increase opportunities for students to engage in activities which contribute to educational and/or social growth outside the classroom
- Establish coordination, communication and cooperation among the officially registered student clubs
- Promote the development of student leadership, service and networking
- Promote campus and public awareness of inter-club council activities

Student clubs are governed by the Associated Students of Merced College. Each club designates one (1) student who will represent and serve the club at ASMC Council Meetings and have a vote on all issues. During the Fall and Spring semesters, ASMC holds open council meetings every Tuesday at 02:00p in the Student Union Building, Room 137. The meeting agenda and minutes are on display at the ASMC office.

For information on clubs and club activities, visit the ASMC webpage at: www.mccd.edu/organizations/student/asmc.html
Counseling Department

The Counseling Department is staffed by professional counselors with training and expertise in the areas of personal, educational, and vocational/career development. In addition to services provided by the professional counseling staff, the Center is also staffed by teaching faculty who can provide academic advisement in their areas of concentration or major. Counselors and advisors will assist students in making satisfactory progress in their program of study and will confirm that they are taking appropriate prerequisite course work necessary for success in higher level courses which may be required for their major.

Counselors are also assigned to other support services and programs, including Extended Opportunity Programs and Services, Disabled Student Services, International Student Services, the Career/Transfer Center, Veterans Services, V.T.E.A., CalWORKS, Non-credit Matriculation and Student Athlete Support.

Appointments with counselors done either on an appointment or walk-in basis. The Counseling Department is open Monday through Friday from 08:00a to 04:30p and Wednesday evenings until 07:00p. Please plan to check-in no later than 30 minutes prior to closing.

Disabled Student Services

Disabled Student Services (DSS) provides support services and educational accommodations to students with disabilities allowing them to benefit from the college experience equally with non-disabled students. Examples of services include course planning and registration assistance, diagnostic assessment for learning disabilities, access to assistive computer technologies, alternate print material such as Braille or e-text, books on tape or CD, testing accommodations, adaptive physical education, interpreters for the deaf, and classroom note takers.

DSS staff provides a supportive and individualized approach to the provision of services. Students are encouraged to stop by DSS on the Merced or Los Baños campus to see if they qualify for services. Call (209) 384-6155 or (209) 384-6311 (TDD) in Merced, or (209) 826-3495 in Los Baños for more information.

Extended Opportunity Programs and Services (EOPS) and CARE Programs

The Merced College, EOPS program provides academic & personal counseling, book service, book loans, priority registration, and EOPS grants for eligible students.

The CARE program is an additional service provided through the EOPS program to assist the single parent students that have a child under the age of 14 that receives TANF. The additional services to CARE eligible students include CARE orientation and workshops, CARE grants, meal cards, gas cards, and bus passes.

To determine eligibility for EOPS/CARE, contact the EOPS office at (209) 381-6596 or the Los Baños EOPS Office at (209) 826-3495 for more information.

Financial Aid

College facilities are available for use by public agencies and community organizations to serve the educational, economic, and artistic interests of the citizens of the community. Hundreds of events per year are scheduled on the Merced campus. A comprehensive master calendar is maintained in the Facilities Office. Both indoor and outdoor facilities are available, subject to priority of instructional programs. Reservations for meetings and/or banquets should be made well ahead of time by calling the Facilities Office at (209) 381-6593.

To help accommodate students with supplemental needs, the College provides a variety of financial assistance methods through the Financial Aid Office on the Merced and Los Baños campuses.

Available programs include: 1) the Federal Pell Grant; 2) the Federal Supplemental Educational Opportunity Grant (SEOG); 3) the Federal Work Study program; 4) State of California Cal Grant programs; 5) State of California Board of Governors Fee Waiver (BOG); and 6) Merced College Foundation Scholarships.

Application

Financial aid funds come from appropriations made by the Federal and State governments and through scholarship awards made by individuals and other public and private agencies and organizations. Hence, each of these funds MUST be administered according to different sets of policies, regulations, and/or specific requirements. To make the process of receiving aid as simple as possible, the Free Application for Federal Student Aid (FAFSA) determines eligibility for most state and federal assistance programs. Students are also required to file a Grade Point Average Verification Form with the California Student Aid Commission for a Cal Grant. Separate applications forms for specialized grants (the Child Development Grant and the Chafee Grant for Foster Youth) are also required. Separate scholarship applications for a number of locally administered scholarships are available in the Financial Aid offices on both campuses.

Student Eligibility

Policies relating to the College’s general admission and academic progress standards are described elsewhere in this catalog. Following are the requirements for most financial aid administered by Merced College:

- You must be a U.S. citizen or eligible non-citizen
- You must have a valid Social Security number;
- You must be working toward a degree or certificate;
- You must be making satisfactory academic progress;
- You must not owe a refund on a Federal grant or be in default on a Federal educational loan;
- You must have a “financial need” as determined by submitting the FAFSA;
- You must have a high school diploma, or GED, or pass the California High School Proficiency Examination.
To be eligible for California grants, students MUST also:

- Be a resident of California, and have “financial need” based on the criteria for the BOG or Cal Grant Program.
- Recent legislation was passed that provides eligibility for certain AB540 students to apply for and receive state grants, scholarships and waivers. Information regarding dates and application procedures can be found online at http://www.mccd.edu/services/fsfssa.html.

Additional information about financial aid is available in the Financial Aid Office, or online at http://www.mccd.edu/services/fsfssa.

**Merced College Standards of Satisfactory Academic Progress for Financial Aid Eligibility**

This policy has been developed for students receiving Financial Aid. Federal laws require students to move toward the completion of a degree or certificate when receiving financial aid. These laws state that Academic Progress Standards MUST include a review of periods of enrollment in which students did not receive aid as well as the periods they did receive aid.

For the purpose of financial aid eligibility, students MUST meet the following minimum standards:

- You must maintain a grade point average of at least 2.0 in all units attempted. This includes a cumulative GPA as well as a 2.0 for your last two semesters.
- Your transcript history must reflect at least a 67 percent successful completion of all enrolled units.
- You will be expected to complete a degree or certificate program based on the 150% maximum of the published unit requirement. Exception to this maximum may be made with appropriate documentation on a case-by-case basis.

Students may appeal a denial of aid based on the maximum time limits by submitting an appeal form and an educational plan, which has been reviewed and signed by a counselor, and which shows the revised goal and specific additional unit requirements. Students may also appeal a denial based on poor grades. The appeal forms can be obtained on the Merced College Financial Aid web site forms page http://www.mccd.edu/services/fsfssa.html. Each appeal will be reviewed on a case-by-case basis. Students will be notified in writing of a probationary status or denial of financial aid when academic progress has not been met.

**Financial Aid Repayment Policy**

For students who withdraw on or after the first day of class after receiving Title IV funds (Federal Financial Aid) for non-institutional charges, the institution MUST determine whether they owe a repayment of any portion of the funds received.

If the institution determines that non-institutional educational expenses incurred up to the time of withdrawal exceed the amount of cash disbursed, students have not been overpaid and may be entitled to a post-withdrawal disbursement. If the cash disbursed exceeds non-institutional costs, the excess amount is an overpayment and students must repay these funds. All non-institutional living expenses are prorated based on the number of weeks the student has completed during the semester.

Return to Title IV Funds calculations are based on the student’s:
1) Federal financial aid award; 2) enrollment status (full, three-quarter, half, or less than half time) at the time of final withdrawal; and 3) the portion of the term completed.

**Deadlines/Priority Dates**

To be considered for California State Cal Grant A, B, and/or C programs, the FAFSA application and the GPA Verification form for Cal Grants must be filed by March 2 of each year. It is recommended that students obtain a proof of mailing from the Postmaster to document filing on or before the March 2 deadline. Please read the GPA Verification form instructions carefully, because changes are made every year.

September 2 is the deadline for a second chance opportunity for Cal Grants that is available to community college students only.

The Merced College Admissions & Records office automatically verifies electronically GPAs for all continuing students who have completed a sufficient number of degree applicable units prior to the deadlines. Students should check with A&R to determine if their GPA has been submitted electronically to the California Student Aid Commission. Merced College Foundation scholarship applications are due annually on March 31. The window of opportunity for scholarship applications is March 1 to March 31. If March 31 falls on a weekend, then the due date is the last working day before the weekend. Notices will be posted each year. Students can obtain a Scholarship Application in the Financial Aid Office.

**Honors Program**

The Merced College Honors Program is designed to meet the needs of exceptional students by providing an enriched educational environment. Students are challenged to reach their full intellectual potential and to better prepare themselves for the academic demands of a four-year college or university.

Enrollment: Any new student with a 3.5 cumulative grade point average, or any continuing student with a 3.25 cumulative grade point average, may enroll in honors classes. Students who do not meet one of these enrollment requirements may also enroll in individual honors classes by successfully completing the challenge process. Inquiries regarding the Honors Program should be directed to Dr. Max Hallman, Honors Program Coordinator, at (209) 384-6327 or at hallman.m@mccd.edu.

Curriculum: The core curriculum of the Honors Program will consist of several honors-designated courses that fulfill CSU and IGETC transfer requirements. At least two of these courses will be offered each semester. In some cases, the courses offered will be taught in back-to-back time slots with instructors coordinating their lectures.

In addition to the core curriculum, a two-unit honors seminar will be offered each semester, and one-unit seminars in various disciplines will be offered periodically. These seminars are intended to give the student an opportunity to do advanced reading and research under the close supervision of a Merced College faculty member or members.

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Honors Scholarships: With available funds through the Merced College Foundation, McConnell Honors Scholarships are offered to a number of students enrolled in honors classes. These scholarships carry a $1000 award and may be provided for a maximum of two years. For more information on honors scholarships, contact Dr. Max Hallman at (209) 384-6327 or the Financial Aid Office at (209) 384-6031.

Alpha Gamma Sigma
Initial Membership: Students with a minimum cumulative grade point average of 3.0 can attain initial membership upon completion of at least 12 semester units within a maximum of two semesters at any recognized institution of higher education. (No units acquired more than two years prior to application for initial membership will be used prohibitive.)

Temporary Membership: Life members of the California Scholarship Federation who graduated with a minimum GPA of 3.5 at the high school level, are invited to become a temporary member during the first semester at a community college. Upon the payment of fees, temporary members have all the privileges of membership except that of holding office.

Continuing Membership: An initial or temporary member can attain continuing membership status by achieving at least a 3.0 GPA for the previous semester in courses recognized in college standing, or by maintaining a cumulative 3.0 GPA or better in courses of recognized college standing. (Continuing members will receive a one-semester grace period to recover from a drop below 3.0 GPA. There will not be two consecutive grace periods.)

Permanent Membership: A member can apply for permanent membership by maintaining a cumulative 3.5 GPA or higher and by being a member of AGS for at least one term. A continuing member who has maintained a cumulative 3.25 GPA or higher and who has been a member of AGS for at least two terms may also apply. All applicants must have completed a minimum of 60 semester units of recognized college courses with a minimum of 30 units completed at a community college.

Retroactive Membership is also an option. Ask an advisor for details.

For additional information, please visit the following website: http://www.mccd.edu/faculty/mcbride/alphagammasigma.htm.

Phi Theta Kappa
Phi Theta Kappa is the largest international honor society serving colleges offering associate degree programs. Founded in 1918, Phi Theta Kappa currently has more than 1,200 chapters in the United States and abroad. Its main purpose is to recognize and encourage academic excellence among associate degree students, but the four hallmarks to which Phi Theta Kappa is dedicated are scholarship, leadership, service, and fellowship.

Membership: To be accepted into Phi Theta Kappa, a student must:
- Have completed at least 12 units of course work at Merced College;
- Have a cumulative grade point average of 3.45 or higher;
- Complete and submit a membership profile form;
- Pay a one-time membership fee at the time of application.

Privileges: Members of Phi Theta Kappa are entitled to:
- Wear the Phi Theta Kappa stole at graduation;
- Have the Phi Theta Kappa seal affixed to their diploma;
- Attend regional and national conventions;
- Participate in the Summer Honors Institute;
- Apply for assorted Phi Theta Kappa scholarships (there are 39 million dollars in transfer scholarships available);
- Participate in projects of the local chapter.

The principal induction is held during the spring semester, but memberships will be accepted throughout the academic year; however, graduating students must apply at least 45 days prior to graduation.

Housing Services
Although the College does not officially authorize any housing, advising for students seeking housing is available in the Associated Students of Merced College office. For further information, contact ASMC at (209) 384-6114.

Job Opportunity Services
Job Opportunity Services offers employment referral assistance for part-time, temporary, and full-time jobs for students attending Merced College and for up to two years after graduation. Other services provided are resume writing, interviewing techniques, job search assistance, and information regarding employment trends. The center also provides listings from summer camp programs locally and countrywide.

Students who already have jobs may sign up for Cooperative Education, earning college credit while they work and providing an opportunity for skill development and career exploration.

Office hours: Monday, Tuesday, Thursday: 10:00a to 02:00p Wednesday: 10:00a-02:00p and 03:00p to 06:00p.

Learning Communities
Learning Communities are pairs or clusters of courses that revolve around a theme or major. These courses are taught by creative faculty dedicated to student success. Learning Communities enhance students’ academic and social opportunities, improve connection with faculty and peers, and provide greater involvement in learning. If students are interested in learning communities they must enroll in all of the linked classes. Students must see a counselor to determine if they are eligible to enroll.

Library
The Library opened in a new facility in February 2007 and is located on University Avenue on the north side of campus. The library purchases materials and media and provides services in support of Merced College’s student learning outcomes and provides the following:
- Information and reference help for students and faculty;
- Information competency and library instruction;
- Print materials, media, and technology for students and faculty;
- Access to online and electronic resources;
- Spaces for reading, media viewing, studying, collaborative projects, and meetings

Current Merced College students, faculty, and staff have access to over 40,000 books and 200 print newspaper and periodical
subscriptions in the library. In addition, they can use student information stations to access the electronic book collection, several online databases, and full text journal subscriptions through the Merced College Portal. The library also has an index to and extensive holdings of the New York Times on microfilm. A variety of other materials is available including pamphlets, CD, DVD, books on tape, and videos. Technology is available for students to listen to and view media in the library.

Faculty Librarians assist students and faculty with information and reference needs and provide class-based information literacy instruction and library orientations. Students are encouraged to approach reference librarians for assistance in locating information and materials. Interlibrary loan is available through the reference librarians.

Most library materials may be checked out. Students may borrow books and media for specified periods of time ranging from two weeks to overnight. Some reserve and media items are for in library use only.

Only current students, faculty, and staff of Merced College can check out materials, use reserve materials, or use computer stations.

Math Lab
The Math lab is always staffed with math faculty to assist students with math skills acquisition. The lab provides faculty support and computer tutorials for all math students. Math instructors assist students individually with questions from basic to advanced math. Graphing calculators are available for use in the lab only. Students who enroll in a math course are automatically enrolled in the non-credit EDU-112B lab course. There are no fees for this course and attendance is optional. The Math Lab is located in the Science Building, Room 201 (upstairs). The lab is open Monday through Thursday from 08:00a to 07:00p and Friday from 08:00a to 01:00p

For more information, call (209) 384-6293.

Matriculation
The College is committed to each student's educational success. Merced College strives to make students aware of our varied educational programs. The College provides many services to ensure success.

All students who enroll in credit courses "matriculate." Matriculation is a process that brings Merced College and each student into an agreement for the purpose of realizing the student's educational objectives.

Within the State Matriculation Plan, Merced College provides:
- An admissions process;
- An assessment of basic educational skills and career goals;
- Pre-enrollment counseling/advising and course selection;
- An orientation to college programs, services, and procedures;
- A suitable curriculum or program of courses;
- Quality instruction;
- Continuous follow-up on student progress with referral to support services when needed.

As part of the Matriculation Plan, students agree to:
- Express a broad educational intent at the time of admission;
- Declare a specific educational objective within a reasonable period of enrollment;
- Complete the assessment process;
- Confer with counselors for registration approval and discussion of educational and vocational choices;
- Meet with a counselor to develop an educational plan once 15 units of course work have been completed;
- Attend classes and complete assigned course work;
- Seek out support services as needed;
- Complete courses and maintain progress toward an educational goal.

Merced College Theater
The MC Theater presents a variety of music, drama, dance, and other of live performances throughout the year. Featured performances include student productions by the theatre and music departments, as well as, events by local and international artists and performers. Most theater events are open to the public—please visit the website or call for ticket information. www.mccd.edu/theArts or call 386-6644.

Puente Project
Puente students...
- Succeed academically
- Are recognized as leaders and scholars
- Graduate from four-year colleges and universities
- Belong to a statewide network of leaders and professionals.

Puente was founded in 1981 by Co-director Felix Galaviz and Patricia McGrath at Chabot College in Hayward. The program mission was to increase the number of Mexican American/ Latino students transferring to four-year colleges and universities. Since then, Puente has expanded to numerous community colleges throughout the state. Today, Puente is open to all students who wish to transfer to a four-year university.

Many components work together to prepare Puente students to transfer to four-year colleges and universities:

English and Guidance Instruction: Puente students take two consecutive writing classes, ENGL-85 and ENGL-01A and additional English/Education courses as scheduled by the project instructors. These classes provide a supportive and stimulating environment for Puente students to build confidence in their writing skills through an exploration of the Mexican American/Latino experience. All Puente students are also required to enroll in the program's Guidance 30 and Guidance 45 courses.

Counseling: Puente students work closely with their Puente counselor until they transfer, exploring career options, developing an academic educational plan, and identifying lifetime goals. Students visit University of California, California State University and private college campuses and attend an annual Puente student transfer conference.

Mentors: Business or professional mentors share with students their personal, academic, and career experiences, and provide a window into "real-life" work environments. The network of trained Puente mentors provides many resources for the Puente students, their families, their colleges, and the community.

Call the Guidance Division at (209) 381-6456 for more information.
Supplemental Instruction

Supplemental Instruction (SI) is an academic assistance program that utilizes peer-assisted study sessions to assist students with traditionally difficult academic courses. SI sessions are regularly scheduled, informal review sessions in which students compare notes, discuss readings, develop organizational tools, and predict test items. Students learn how to integrate course content and study skills while working together. The sessions are facilitated by SI leaders (students who have previously excelled in the course) and who attend all class lectures, take notes, and act as role models. SI sessions are open to all students in the course and are attended on a voluntary basis.

Student Health Services

All currently enrolled Merced College students are eligible for Student Health Services. Services are coordinated through the Student Health Services office located in the Student Union building. Services provided include:

- Health information and education for students regarding medical conditions, nutrition, family planning, adjustment problems, sexually-transmitted disease information, drug and alcohol recovery resources.
- Short term personal counseling services.
- Assistance with locating various health care providers within the community.
- Skin testing for TB (tuberculosis).
- Over-the-counter medication samples.
- Secondary accident insurance coverage for all students while on campus or involved in Merced College-sponsored activities off-campus. (An accident report must be completed.)
- First aid services.
- Pregnancy testing.
- Condoms.

For more information, call (209) 384-6045 or visit the web site at www.mccd.edu/studentthealth/.

Student Success Program

The Student Success Office oversees student learning support services including Tutorial Center, Math Lab, Study Central, Supplemental Instruction (SI), and Learning Communities. The ultimate goal of the Student Success Program is to connect students with the appropriate academic support services and resources needed to achieve their educational goals. For more information, contact Tomasia Drummond, director of Student Success, at (209) 384-6318.

Study Central

Study Central is a place where students can receive assistance from highly trained peer guides, and faculty who specialize in a variety of academic fields. It provides a comfortable environment for students to study or work on homework, individually or in small groups. Study Central is equipped with computers and Internet access for research and class-related assignments. In addition, Study Central offers free, drop-in academic workshops that cover a variety of topics supporting student success. Study Central is located in the Student Union Building and it is open Monday through Friday from 09:00a to 02:00p. Call (209) 384-6177 for more information.

Tutorial Center

The Tutorial Center provides tutoring at no cost to students who are currently enrolled in the course for which the student is seeking tutoring. Students must complete a tutoring referral form and be referred by a counselor or instructor to receive tutoring services. The Center provides individual and group tutoring in most subjects and is staffed with professional faculty and highly-trained peer tutors. Tutors are students who have been recommended by their instructors and have completed a tutor training course. The Tutorial Center is located at the Merced campus in Communications Building Room 1. The center is open Monday through Thursday from 08:00a to 07:00p and Friday 08:00a to 04:00p. For more information, call (209) 384-6329.

Veterans Services

Merced College welcomes veterans wishing to further their education and encourages them to seek assistance at the Veteran's Resource Center, which is located near the cafeteria in the Student Union Building. Staff are available to provide the paperwork and information necessary to establish eligibility. Veterans are also supplied with information about other campus resources and local agencies services. Department of Veterans Affairs encourages all new and returning veterans to contact them directly at www.gibill.va.gov or (888) 442-4551 for questions about veteran’s benefits and payments.

Merced College is one of 1900 members of the Servicemen's Opportunity College dedicated to assisting service members, their family members, and veterans in attaining their educational goals.

Academic counselors specializing in veterans services are available to provide educational and career planning. Counseling services are provided on the second floor of the Lesher Student Services Center, next to Admissions & Records. Class registration information can be found in the “Schedule of Classes” booklet printed each semester or on the Merced College website: http://www.mccd.edu/academics/resources/schedule.html.

Veterans with disabilities can receive assistance from the College’s Disabled Student Services program. Call (209) 384-6155 for more information about available services.

Personal Counseling is available through the Merced College Student Health Services Office. Call (209) 384-6045 for more information.

Additional information may be found at http://www.mccd.edu/services/guidance/veterans.html or by calling (209) 384-6113.
Catalog Rights
An undergraduate student remaining in attendance in regular sessions at any California community college, or any combination of California community colleges and campuses of the California State University, may elect for purposes of meeting graduation requirements to meet the Merced College requirements in effect either

1. At the time the student began such attendance;
2. At the time of entrance to Merced College;
3. At the time of graduation from Merced College.

Campus authorities may authorize or require substitutions for discontinued courses. A campus may require a student changing his or her major or any minor field of study to complete the major or minor requirements in effect at the time of the change.

For purposes of this section “attendance” means attendance in at least one semester or two quarters each calendar year.

Applying for Graduation
Students must complete an application for graduation in order to be eligible for graduation in their major or to receive a Certificate of Achievement in their area of study. Graduation applications are available through the Counseling Department at the beginning of the third week of each regular semester for an eight-week period. Students may apply for graduation one semester before intending to complete their requirements.

When the application is received, the student’s transcript record will be evaluated and notification of eligibility or of any deficiencies that would prevent the successful completion of the degree requirements at Merced College will be sent.

Superintendent's Honors
Graduating students who have completed at least 36 units at Merced College, and have maintained a GPA of 4.0 in courses at Merced College and in all course work attempted at any other colleges will receive recognition from the Superintendent/President of Merced College. Work in progress from the spring semester will not be used in this computation. The computation will be based on completed grades recorded on the student’s official Merced College transcript.

Graduation with Honors
Graduating student who have completed at least 45 units at Merced College and have maintained a 3.5 GPA in courses at Merced College* and in all course work attempted at any other colleges will be graduated with honors. Work in progress from the spring semester will not be used in this computation. The computation will be based on completed grades recorded on the student’s official Merced College transcript.

*The GPA calculated for the purposes of Superintendent’s Honors and graduation with honors excludes physical education activity courses, more than eight units in Cooperative Education, all remedial-level courses, and “P/NP” grades in any courses.

Graduation Requirements
Requirements for graduation with an associate in arts or an associate in science degree are prescribed by the Board of Governors of the California Community Colleges and the Board of Trustees of the Merced Community College District. These are as follows:

- You must complete at least 60 degree-applicable units.
- Effective for all students admitted to a community college in Fall 2009 and thereafter, all courses that count toward the associate degree major or area of emphasis must be “satisfactorily completed” with grades of A, B, C or P (pass). All degree requirements, including general education, must be completed with an overall grade point average of 2.0 or better.
- You must complete at least 12 units at Merced College.
- You must file an application for graduation by the current deadline as reflected in the school calendar.
- You must complete associate breadth requirements consisting of 23-27 units.
- You must complete the major requirements for either an Associate in Arts or Science degree (see below and listings under “Programs, Associate Degree, Certificate, and Transfer”). Courses taken to satisfy either the associate breadth requirement or the associate major requirement may be double-counted.
- You may choose electives from the courses numbered 1-79 and the independent letters A, B, C, etc.
- The Associate in Science degree is awarded for completing 30 or more units in engineering, math, science, or technical programs. The Associate in Arts degree is awarded for all other majors (the major must contain a minimum of 18 units).
- Meet competencies as described in the following section.

Note: Students may be awarded more than one associate degree if they’ve completed all applicable requirements; however, they must meet the requirements in effect at the time the new degree is declared.
Associate Degrees for Transfer

California Community Colleges are now offering associate degrees for transfer to the CSU. These may include Associate in Arts (AA-T) or Associate in Science (AS-T) degrees. These degrees are designed to provide a clear pathway to a CSU major and baccalaureate degree. California Community College students who are awarded an AA-T or AS-T degree are guaranteed admission with junior standing somewhere in the CSU system and given priority admission consideration to their local CSU campus or to a program that is deemed similar to their community college major. This priority does not guarantee admission to specific majors or campuses.

Students who have been awarded an AA-T or AS-T are able to complete their remaining requirements for the 120-unit baccalaureate degree within 60 semester or 90 quarter units.

To view the most current list of Merced College Associate Degrees for Transfer and to find out which CSU campuses accept each degree, please go to http://www.sb1440.org/.

Current and prospective community college students are encouraged to meet with a counselor to review their options for transfer and to develop an educational plan that best meets their goals and needs.

Currently, Merced College has four approved AA-/AS-T Degrees: Administration of Justice, Communication Studies, Mathematics, and Psychology. Additional majors are being developed. Please see a counselor and www.mccd.edu for more information.

Competency Requirements

Students must achieve competency in the areas of reading, writing, mathematics, and computer and information literacy through the following:

Reading Competency

Students must receive a grade of “C” or better in ENGL-01A or the equivalent.

Writing Competency

Students must receive a grade of “C” or better in ENGL-01A, or the equivalent.

Math Competency

Students must receive a grade of “C” or better in MATH-C or MATH-D or a grade of “C” or better in any course which has the prerequisite of Math C, or the equivalent.

Computer and Information Literacy

Merced College instituted a competency in Computer and Information Literacy in fall 2000. To meet the competency required in Computer and Information Literacy, students must receive a grade of “C” or better in courses which meet each of the competency requirements A through G listed below.

A. Name and describe the typical digital computer components and their functions;
B. Describe common computer applications and related social and ethical problems/impact;
C. Learn fundamental operation and concepts of word processing, spreadsheet, and/or database software applications;
D. Understand the difference between information and knowledge;
E. Understand the links among information centers and the access points available through technology and reference sources;
F. Understand the basic structure of electronic databases and the strategies used to access them;
G. Recognize the different levels, types, and formats of information including but not limited to primary vs. secondary, and popular vs. scholarly.

The courses and programs listed in the following grid show the areas of competency covered in a given catalog year. The catalog year in which the course or program is completed determines if a particular competency is met. Competencies met by a specific course or program may change on a yearly basis.

Students should check their completed course work against the competency grid and consult a counselor to identify any specific competency still required.

Computer and Information Literacy competencies catalog rights are determined by the grid listed in the current catalog. Courses are determined to meet the competencies based upon the catalog year in which the student completes the target course, not upon the catalog when the student began attending Merced College.
Following are the areas of Computer and Information Literacy that various Merced College courses fulfil.

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ASSOCIATE DEGREE MAJORS AND CERTIFICATE PROGRAMS 2012-2013

Associate Degrees:
Because learning is a continual process of self-discovery, students are encouraged to keep an open mind about their potential and options. California Community Colleges have unique relationships with the University of California and California State University systems so that students can move easily from a two-year to a four-year college. With proper planning, students can earn an associate degree while fulfilling the lower division requirements of a four-year school. When choosing courses at Merced College, students are encouraged to keep their options open for transfer.

Certificates of Achievement:
Students interested in taking only the occupational major area classes will be eligible to receive a Certificate of Achievement from Merced College upon the successful completion of the final occupational major area course. A minimum 2.0 grade point or better is required in the area of concentration, and a minimum of 12 units must be taken at Merced College.

Merced College awards Associate Degrees, Associate Degrees for Transfer or Certificates in the following areas:

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<td></td>
<td>04130.00 CL Biotechnology (CL)</td>
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<tr>
<td>Diesel Equipment Technology</td>
<td>09120.00 AA Diesel Equipment Technology (AA)</td>
</tr>
<tr>
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<td>09120.00 AS Diesel Equipment Technology (AS)</td>
</tr>
<tr>
<td></td>
<td>09120.00 CT Diesel Equipment Technology (CT)</td>
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<tr>
<td>CSU General Education</td>
<td>49100.00 CL CSU General Education Breadth (CT)</td>
</tr>
<tr>
<td></td>
<td>49100.00 CT CSU General Education Breadth (CT)</td>
</tr>
</tbody>
</table>

AA-T = Associate in Arts (A.A.-T.) Degree for Transfer
BB-T = Associate in Business (A.B.-T.) Degree for Transfer
AA = Associate in Arts (A.A.) degree
AS = Associate in Science (A.S.) degree
CE = Certificate requiring 6 to fewer than 18 semester units (Not approved by Chancellor’s Office)
CO = Other credit Award, under 6 semester units
AS-T = Associate in Science (A.S.-T.) Degree for Transfer
CL = Certificate requiring 18 to fewer than 30 semester units
CB = Certificate requiring 12 to fewer than 18 semester units (Approved by Chancellor’s Office)
CT = Certificate requiring 30 to fewer than 60 semester units
CF = Certificate requiring 60 or more semester units

### Drafting Technology
- **09101.AA** CAD Draftsman - Architectural (AA)
- **09102.AA** CAD Draftsman - Mechanical (AA)
- **09101.CL** CAD Draftsman - Architectural (CL)
- **09102.CL** CAD Draftsman - Mechanical (CL)
- **09104.CT** CAD Drafting - Architectural Design (CT)
- **09105.CT** CAD Drafting - Mechanical Design (CT)
- **09103.CB** CAD Operator (CB)
- **10300.AA** Drama (AA)

### Electronics/Electrical and Computer Technologies
- **09040.AA** Computer & Networking Technology (AA)
- **09040.CT** Computer & Networking Technology (CT)
- **09401.AA** Commercial Refrigeration Technician (AA)
- **09401.CT** Commercial Refrigeration Technician (CT)
- **09500.AA** Industrial Electronics Technology (AA)
- **09500.CT** Industrial Electronics Technology (CT)
- **09650.AA** Instrumentation and Process Control Technology (AA)
- **09650.CT** Instrumentation and Process Control Technology (CT)
- **09200.AA** Electrical Technology (AA)
- **09200.CT** Electrical Technology (CT)
- **09250.AA** Electronics Technician (AA)
- **09250.CT** Electronics Technician (CT)
- **10300.AA** Electrical Technology (AA)
- **10410.AA** Industrial Maintenance Technology (AA)

### Entrepreneurship
- **05700.AA** Small Business Entrepreneurship (AA)
- **05700.CT** Small Business Entrepreneurship (CT)

### Environmental Technologies
- **03301.AS** Environmental Technologies (AS)
- **03301.CT** Environmental Technologies (CT)

### Fire Technology
- **21400.AA** Fire Technology (AA)
- **21400.CT** Fire Technology (CT)

### Business Administration
- **01250.AA** Business Administration (AA)
- **01250.AS** Business Administration (AS)
- **01250.CT** Business Administration (CT)

### Arts
- **10300.AA** Drama (AA)

### Humanities
- **49300.AA** Humanities (AA)

### Business Administration
- **05450.AA** Management/Supervisory Training (AA)
- **05450.CT** Management/Supervisory Training (CT)

### Management
- **05500.AA** Management/Supervisory Training (AA)
- **05500.CT** Management/Supervisory Training (CT)

### Mechanized Agriculture
- **01450.AA** Mechanized Agricultural Technology/Heavy Equipment Mechanics (AA)
- **01450.CT** Mechanized Agricultural Technology/Heavy Equipment Mechanics (CT)

### Natural Sciences
- **19400.AS** Geology (AS)

### Physical Education
- **22300.AA** History (AA)

### Psychology
- **21500.AA** Human Services (AA)
- **21500.CT** Human Services (CT)

### Other credit Award
- **49820.AA** Natural Sciences (AA)

### Other credit Award
- **12500.AS** Nursing, Registered (AS)
- **12550.AA** Nursing, Vocational (AA)
- **12550.CT** Nursing, Vocational (CT)

<table>
<thead>
<tr>
<th>Code</th>
<th>Degree Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA-T</td>
<td>Associate in Arts (A.A.-T.) Degree for Transfer</td>
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</tr>
<tr>
<td>AS-T</td>
<td>Associate in Science (A.S.-T.) Degree for Transfer</td>
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</tr>
<tr>
<td>AA</td>
<td>Associate in Arts (A.A.) degree</td>
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<tr>
<td>AS</td>
<td>Associate in Science (A.S.) degree</td>
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<tr>
<td>CE</td>
<td>Certificate requiring 6 to fewer than 18 semester units (Not approved by Chancellor’s Office)</td>
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<tr>
<td>CB</td>
<td>Certificate requiring 12 to fewer than 18 semester units (Approved by Chancellor’s Office)</td>
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<tr>
<td>CL</td>
<td>Certificate requiring 18 to fewer than 30 semester units</td>
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<td>CT</td>
<td>Certificate requiring 30 to fewer than 60 semester units</td>
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<tr>
<td>CF</td>
<td>Certificate requiring 60 or more semester units</td>
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<tr>
<td>CO</td>
<td>Other credit Award, under 6 semester units</td>
<td></td>
</tr>
</tbody>
</table>

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38 • Preparing For Graduation •
Radiologic Technology
12700.AS Diagnostic Radiologic Technology (AS)
12700.CF Diagnostic Radiologic Technology (CF)

05600.AA Real Estate (AA)
05600.CL Real Estate (CL)

22600.AA Social and Behavioral Sciences (AA)

Sonography
12800.CT Diagnostic Medical Sonography (CT)
12801.CT Diagnostic Medical Sonography: Cardiac Track (CT)

11600.AA Spanish (AA)

09800.AA Welding Technology (AA)
09800.CL Welding Technology (CL)

Continuing Education (Noncredit)
49165.NC Basic Skills
21078.NC Court Interpreter
49194.NC ESL
10100.NC Medical Assistant
07744.NC Technical Office Occupations

Certificates Not Transcripted
05200.CO Customer Service Academy Certificate (CO)
13180.CE Dietetic Services Supervisor (CE)
12100.CO Emergency Medical Technician (CO)
13200.CO Foster Care Education Certificate of Specialization (CO)
01302.CO Horseshoeing - Advanced Certificate (CO)
01301.CO Horseshoeing - Beginning Certificate (CO)
12150.CO Nursing Assistant (CO)
05800.CE Virtual Office Professional (CE)
ASSOCIATE DEGREE BREADTH REQUIREMENTS
2012-2013

Breadth requirements are designed to introduce students to the variety of means through which people comprehend the modern world. Those who receive associate degrees must possess in common certain basic principles, concepts and methodologies unique to and shared by the various fields of study. College-educated persons must be able to use this knowledge when evaluating and appreciating the physical environment, the culture, and the society in which they live. Most importantly, this education should lead to a better self understanding.

A student may use the same course to fulfill an AA/AS major requirement and associate degree breadth requirement.

To complete the associate breadth requirement, students must select courses that fulfill the unit requirements of the following areas:

Area A - Language and Rationality ........................................... (6 units total)
Courses in language and rationality are those which develop for the student the principles and applications of language toward logical thought, clear and precise expression and critical evaluation of communication in whatever symbol system the student uses. (Select one course from each area.)
(A1) English Composition...............................................................(3 units)
ENGL-01A
(A2) Communication and Analytical Thinking............................(3 units)
ACTG-04A
COMM-01, 01H, 02, 04, 05, 30
ENGL-13, 13H
MATH-C, D, 02, 04A, 04B, 04C, 05A, 05B, 06, 08, 10, 15, 20A, 20B, 25, 26
PHIL-10, 12, 13, 13H
PSYC-05

Area B - Natural Sciences....................................................... (3-6 units total)
Courses in the natural sciences are those which examine the physical universe, its life forms, and its natural phenomena. (For an A.A. degree, select one course from either area B1 or B2; for an A.S. Degree, select one course from each area.)
(B1) Physical Science.................................................................(3 units)
ARCH-01
ASTR-01, 01L
CHEM-02A, 02B, 04A, 04B
ELCT-30
GEOG-01
PHSC-01, 01L
PHYS-02A, 04A, 10
SOIL-10

(B2) Life Science ......................................................................(3 units)
ANSC-10
ANTH-01
BIOL-01, 02, 04A, 04AH, 04B, 04BH, 06, 08, 09, 12, 13, 16, 18, 20,
ENTC-30
25
PLSC-10

Area C - Humanities................................................................. (3 units total)
Courses in the humanities are those which concentrate on the study of cultural activities and artistic expressions of human beings.
ART-01, 02, 06, 12A, 15, 24A
DRAM-01, 02, 02L, 03, 04, 04L
ENGL-01B, 03, 04A, 04B, 05, 06A, 06B, 07, 08, 10, 11, 14, 18
FREN-01, 02, 03, 04
GERM-01, 02, 03, 04
HMNG-01, 02
HUM-01, 01H, 02, 02H, 15*, 18, 21
JPNNS-01A, 01B, 02
MUS-01, 04A, 04B, 11, 12, 13, 14, 36A
PHIL-01, 01H, 03, 04, 05, 15
SPAN-01, 02, 03, 04, 10, 11

Area D - Social and Behavioral Sciences................................. (6 units total)
Courses in the social and behavioral sciences are those which focus on people as members of society. (Select one course from area D1 and one course from area D2.)
(D1)...........................................................................................(3 units)
Includes introductory or integrative survey courses in cultural anthropology, cultural geography, economics, psychology, sociology and related disciplines.
AGBS-11
AGRI-10
ANTH-02, 10*
CRIM-01
ECON-01A, 01B
GEOG-02
PSYC-01A, 01AH, 15, 20, 25, 51
SOC-01, 02

(D2)...........................................................................................(3 units)
Includes introductory or integrative survey courses in history and political science.
23, 24*, 29, 39ABC (as a unit),
POSC-01, 02
SCSC-01

Area E - Lifelong Understanding and Self-Development ............... (5 units total)
Courses in lifelong understanding and self-development are those which equip human beings for lifelong learning by providing them with the skills necessary to function as independent adults in contemporary society and foster an understanding of themselves as integrated physiological and psychological entities. (Select one course from each area.)
(E1) Integrated Organism.........................................................(3 units)
AUTO-04
BUS-34, 35
CLDV-01, 02, 09
CPSC-01
GUID-30, 48, 52
HLTH-10, 16
LAND-11
NUTR-10
PSYC-09, 22, 23, 35, 36

(E2) Activity ..............................................................................(2 units)
ATHL-01A, 01B, 01G, 01J, 01L
DNCE-14
KINE-01
PHED-01, 03, 10, 11, 12, 13, 14, 15

*Designates ethnic studies courses which expose students to, develop an understanding of, and examine cultures that are different from the dominant culture of the United States. In addition, these courses teach an appreciation and knowledge of ethnic contributions to the society of the United States.

BOLD = change since 11-12 catalog.
Merced College participates in the College Level Examination Program (CLEP) offered by the American Council on Education (ACE). Merced College students may only receive credit towards the associate’s degree general education requirements locally established. CLEP general education subject area applicability exists system-wide for students completing CSU GE Breadth, but the UC system does not accept CLEP exams for credit under the IGETC pattern. Please see a counselor for more information.

<table>
<thead>
<tr>
<th>CLEP Examination</th>
<th>Merced College General Education Breadth Areas</th>
<th>Passing Score</th>
<th>Minimum Merced College Semester Units</th>
<th>CSU-GE Breadth and/or American Institutions$^2$/ UNITS</th>
<th>Minimum CSU Semester Credits Earned$^3$</th>
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</thead>
<tbody>
<tr>
<td>American Government</td>
<td>POSC-01 (D2)</td>
<td>50</td>
<td>3</td>
<td>D8 - 3 units</td>
<td>3</td>
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<tr>
<td>American Literature</td>
<td>ENGL-10 or ENGL-11 (C)</td>
<td>50</td>
<td>3</td>
<td>C2 - 3 units</td>
<td>3</td>
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<tr>
<td>Biology</td>
<td>BIOL-01 (B2)</td>
<td>50</td>
<td>4</td>
<td>B2 - 4 units</td>
<td>4</td>
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<tr>
<td>Calculus</td>
<td>MATH-04A (A2)</td>
<td>50</td>
<td>4</td>
<td>B4 - 3 units</td>
<td>3</td>
</tr>
<tr>
<td>College Chemistry</td>
<td>CHEM-02A (B1)</td>
<td>50</td>
<td>4</td>
<td>B1 - 4 units</td>
<td>4</td>
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<tr>
<td>College Algebra</td>
<td>MATH-26 (A2)</td>
<td>50</td>
<td>3</td>
<td>B4 - 3 units</td>
<td>3</td>
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<tr>
<td>English Literature</td>
<td>ENGL-06A or ENGL-06B</td>
<td>50</td>
<td>3</td>
<td>C2 - 3 units</td>
<td>3</td>
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<tr>
<td>French Level I$^1$</td>
<td>FREN-01 or FREN-02 (C)</td>
<td>50</td>
<td>6</td>
<td>N/A - 0 units</td>
<td>6</td>
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<tr>
<td>French Level II$^1$</td>
<td>FREN-03 or FREN-04 (C)</td>
<td>50</td>
<td>6</td>
<td>C2 - 3 units</td>
<td>12</td>
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<tr>
<td>German Level I$^1$</td>
<td>GERM-01 or GERM-02 (C)</td>
<td>50</td>
<td>6</td>
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<td>6</td>
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<tr>
<td>German Level II$^1$</td>
<td>GERM-03 or GERM-04 (C)</td>
<td>60</td>
<td>12</td>
<td>C2 - 3 units</td>
<td>12</td>
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<tr>
<td>History, United States I</td>
<td>HIST-17A (D2)</td>
<td>50</td>
<td>3</td>
<td>D6+US-1 - 3 Units</td>
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<tr>
<td>History, United States II</td>
<td>HIST-17B</td>
<td>50</td>
<td>3</td>
<td>D6+US-1 - 3 Units</td>
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<tr>
<td>Human Growth and Development</td>
<td>PSYC-09 or CLDV-09 (E1)</td>
<td>50</td>
<td>3</td>
<td>E - 3 Units</td>
<td>3</td>
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<tr>
<td>Introduction to Humanities</td>
<td>HUM-01 or HUM-02 (C)</td>
<td>50</td>
<td>3</td>
<td>C2 - 3 Units</td>
<td>3</td>
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<tr>
<td>Introductory Business Law</td>
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<td>50</td>
<td>4</td>
<td>N/A - 0 units</td>
<td>3</td>
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<tr>
<td>Introduction to Psychology</td>
<td>PSYC-01A (D1)</td>
<td>50</td>
<td>3</td>
<td>D9 - 3 Units</td>
<td>3</td>
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<tr>
<td>Introduction to Sociology</td>
<td>SOC-01 (D1)</td>
<td>50</td>
<td>3</td>
<td>D0 - 3 Units</td>
<td>3</td>
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<tr>
<td>Pre-Calculus</td>
<td>MATH-02 (A2)</td>
<td>50</td>
<td>4</td>
<td>B4 - 3 units</td>
<td>3</td>
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<tr>
<td>Principles of Macroeconomics</td>
<td>ECON-01A (D1)</td>
<td>50</td>
<td>3</td>
<td>D2 - 3 Units</td>
<td>3</td>
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<tr>
<td>Principles of Management</td>
<td>MGMT-31 (No GE area)</td>
<td>50</td>
<td>3</td>
<td>N/A - 0 units</td>
<td>3</td>
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<tr>
<td>Principles of Marketing</td>
<td>MKTG-30 (No GE area)</td>
<td>50</td>
<td>3</td>
<td>N/A - 0 units</td>
<td>3</td>
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<tr>
<td>Principles of Microeconomics</td>
<td>ECON-01B (D1)</td>
<td>50</td>
<td>3</td>
<td>D2 - 3 Units</td>
<td>3</td>
</tr>
<tr>
<td>Spanish Level I$^1$</td>
<td>SPAN-01 or SPAN-02 (C)</td>
<td>50</td>
<td>6</td>
<td>N/A - 0 units</td>
<td>6</td>
</tr>
<tr>
<td>Spanish Level II$^1$</td>
<td>SPAN-03 or SPAN-04 (C)</td>
<td>60</td>
<td>6</td>
<td>C2 - 3 units</td>
<td>12</td>
</tr>
<tr>
<td>Western Civilization I</td>
<td>HIST-04A (D2)</td>
<td>50</td>
<td>3</td>
<td>C2 or D6 - 3 Units</td>
<td>3</td>
</tr>
<tr>
<td>Western Civilization II</td>
<td>HIST-04B (D2)</td>
<td>50</td>
<td>3</td>
<td>D6 - 3 Units</td>
<td>3</td>
</tr>
</tbody>
</table>

$^1$If a student passes more than one CLEP test in the same language other than English (e.g. two exams in French), then only one examination may be applied to the baccalaureate. For each test in a language other than English, a passing score of 50 is considered “Level I” and earns six units of baccalaureate credit; the higher score for each test is considered “Level II” and earns additional units of credit and placement in Area C2 of GE Breadth, as noted.

$^2$Areas of GE Breadth (A1 through E) are defined in EO 1033. Areas of American Institutions (US-1 through US-3) are set forth in Sections 1A and 1B of EO 405, and at assist.org.

$^3$These units count toward eligibility for admissions to the CSU. The units may not all apply toward certification of the corresponding GE-Breadth area. (CSU Executive Orders 1033 and 1036).
AP Credit for Merced College Associate Degree Breadth

Students will be granted three to six units of credit upon completion of the Advanced Placement (AP) examination with a score of 3, 4, or 5, depending upon the specific exam listed below. Not all AP exams are identified for credit and no letter grade will be given.

AP credit can not be counted toward the degree major. AP credit can be counted toward the associate degree general education requirements.

AP Credit for CSU GE

- For the fall 1997 term and beyond, all institutions participating in the CSU General Education-Breadth certification may treat the AP examinations listed below as though they were incorporated in the institution’s own General Education-Breadth certification list.
- Students must have scored 3, 4, or 5 on the AP examination to receive the credit indicated. All CSU campuses will accept the minimum units shown below toward fulfillment of the designated General Education—Breadth area if the examination is included in a full or subject-area certification.
- Individual CSU campuses may choose to accept more units than those specified below towards completion of General Education-Breadth requirements. The CSU campus to which the student is transferring determines the total number of units awarded for successful completion of an AP examination and the applicability of the examination to other graduation requirements.
- Not all AP examinations are approved systemwide for fulfillment of General Education-Breadth requirements, nor can all General Education-Breadth areas be completed by AP examination. No AP examination is accepted for fulfillment of the Area A3 (critical thinking) requirement.

AP Credit for IGETC (UC Campuses only)

A score of 3, 4, or 5 is required to grant credit for IGETC certification. An acceptable score for IGETC equates to either 3-semester or 4-quarter units for certification purposes. Each AP exam listed below may be applied to one IGETC area as satisfying one course requirement, with the exception of Language other Than English (LOTE). Students who have earned credit from an AP exam should not take a comparable college course because transfer credit will not be granted for both. If two areas are identified for an AP exam, either area may be used to regardless of where the certifying CCC’s discipline is located.

- Students earning scores of 3, 4, or 5 in the physical and biological science AP examinations earn credit toward IGETC Area 5 and meet the IGETC laboratory activity requirement. AP exams in Biology, Chemistry or Physics B allow CCC campuses to apply 4 semester or 5 quarter units to IGETC certification. For Environmental Science, Physics C: Mechanics and Physics C: Electricity/Magnetism, 3 semester or 4 quarter units are applied for IGETC certification. Therefore, students who complete these exams will be required to complete at least 4 semester or 5 quarter units to satisfy the minimum required units for Area 5.
- There is no equivalent AP exam for Area 1B- Critical Thinking/Composition requirement and Area 1C – Oral Communication (CSU requirement only).
- Actual AP transfer credit awarded for admission, major or baccalaureate degree requirements is determined by the individual CSU and UC campus. Students should check with the transfer campus of their choice for its policies on awarding unit credit for AP exams.

1 If a student passes more than one AP exam in calculus or computer science, only one examination may be applied to the baccalaureate.
2 Students who pass AP Environmental Science earn 4 units of credit. Tests prior to Fall 2009 may apply to either B1+B3 or B2+B3 of GE Breadth. Fall of 2009 or later, those credits may only apply to B1+B3.
3 Students seeking certification in GE Breadth prior to transfer must have passed the test before this date (Fall 2009 OR Fall 2010).
4 If a student passes more than one AP exam in physics, only six units of credit may be applied to the baccalaureate, and only four units of credit may be applied to a certification in GE breadth.
5 AP Exams may be used in either area regardless of where the certifying CCC’s discipline is located. Example: US History at a CCC is approved for Area 3B. The US History AP may be used in Area 3B OR Area 4F.
6 While a score of 3 in English Language satisfies IGETC AREA 1A, some UC campuses or colleges, such as UC Berkeley College of Letters and Science, require AP score of 4 or 5 to meet the equivalent of a first semester Reading and Composition course requirement.
## Advanced Placement (AP) Grid

<table>
<thead>
<tr>
<th>AP Subject</th>
<th>Semester Credits</th>
<th>American Institutions and/or CSU-GE Breadth Area</th>
<th>Removal Date for GE Breadth</th>
<th>IGETC Applicability (3 sem/4qtr)</th>
<th>MC Associate Degree Breadth Areas &amp; unit credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP Art History</td>
<td>3</td>
<td>C1 or C2</td>
<td>3A/3B³</td>
<td>C (3)</td>
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<tr>
<td>AP Biology</td>
<td>4</td>
<td>B2 + B3</td>
<td>5B + lab</td>
<td>B2 (3)</td>
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<tr>
<td>AP Calculus AB¹</td>
<td>3</td>
<td>B4</td>
<td>2A</td>
<td>A2 (3)</td>
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<tr>
<td>AP Calculus BC¹</td>
<td>3</td>
<td>B4</td>
<td>2A</td>
<td>A2 (3)</td>
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<tr>
<td>AP Calculus BC / AB Subscore¹</td>
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<td>B4</td>
<td>2A</td>
<td>A2 (3)</td>
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<tr>
<td>AP Chemistry</td>
<td>6</td>
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<td>F09¹</td>
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<tr>
<td>AP Chemistry</td>
<td>4</td>
<td>B1 + B3</td>
<td>5A+Lab</td>
<td>B1 (6)</td>
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<tr>
<td>AP Chinese Language and Culture</td>
<td>3</td>
<td>C2</td>
<td>6A+3B</td>
<td>C (3)</td>
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<tr>
<td>AP Comparative Government &amp; Politics</td>
<td>3</td>
<td>D8</td>
<td>4H</td>
<td>D2 (3)</td>
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<td>AP Computer Science A¹</td>
<td>0</td>
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<tr>
<td>AP Computer Science AB¹</td>
<td>0</td>
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<td>n/a</td>
<td>n/a</td>
<td></td>
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<tr>
<td>AP English Language</td>
<td>3</td>
<td>A2</td>
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<td>A1 (3)</td>
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<tr>
<td>AP English Literature</td>
<td>6</td>
<td>A2 + C2</td>
<td>1A/3B</td>
<td>A1 + C (6)</td>
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</tr>
<tr>
<td>AP Environmental Science ²</td>
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<td>B2 + B3</td>
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CSU information from Coded memo: AA-2011-12 (September 2011)
IGETC information from www.universityofcalifornia.edu (August 2011)
General Information
Merced College provides the first two years of a four-year college or university program. The requirements for transfer vary considerably among the four-year institutions in California. As a result, entering students are encouraged to meet with a counselor at the College as soon as possible to plan his/her course of study.

The four-year institutions in California fall generally into three categories:

1. The California State University System (CSU): CSU Bakersfield, CSU Channel Islands, CSU Chico, CSU Dominguez Hills, CSU Fresno, CSU Fullerton, CSU East Bay, Humboldt State University, CSU Long Beach, CSU Los Angeles, CSU Maritime Academy, CSU Monterey Bay, CSU Northridge, California State Polytechnic University, Pomona, CSU Sacramento, CSU San Bernardino, CSU San Marcos, San Diego State University, San Francisco State University, San Jose State University, California Polytechnic State University, San Luis Obispo, Sonoma State University, and CSU Stanislaus. Each CSU campus accepts certification of breadth requirements completed at Merced College.

2. The University of California (UC): UC Berkeley, UC Davis, UC Irvine, UC Los Angeles, UC Merced, UC Riverside, UC San Diego, UC San Francisco (medical school), UC Santa Barbara, and UC Santa Cruz. UC campuses support a “transfer core curriculum”; however, each UC campus may list particular breadth and major requirements. Refer to www.assist.org for articulation agreements.

3. The Independent or Private Colleges and Universities: Some examples of the over 100 in California include Brandman University, Stanford University, University of the Pacific, Fresno Pacific, and the University of Southern California. Each private college or university has its own unique requirements.

California State University (CSU)

Basic Information
Merced College courses numbered 1 - 49 have been designated baccalaureate level courses transferable to the CSU system. These courses will be accepted by any campus of the California State University system for credit toward its baccalaureate degrees.

In preparing for transfer to a CSU campus, you should follow two concurrent pathways to complete required course work:

1. The CSU General Education Breadth courses listed on the following page; and
2. Articulated lower division major preparation courses as designated by the particular CSU campus to which you plan to transfer. A Merced College counselor can assist you with course selection.

CSU Transfer Admission Requirements
The majority of transfer students enter as upper-division transfers. Students can qualify for admissions to the CSU system as an upper-division transfer if they have a minimum of 60 semester or 90 quarter units. Your overall grade point average must be at least 2.0 (2.40 for California nonresidents.) The GPA is calculated using all transfer units attempted.

Some transfers will enter as lower-division transfers. If, at the time you will enter the CSU, you have completed 59 or fewer semester or 89 or fewer quarter units you are a lower-division transfer. Some CSU campuses do not accept lower-division transfers, so be sure to check with the campus if you are considering transfer as a lower-division student.

CSU Transfer Breadth Curriculum
Merced College will certify completion of the General Education Breadth requirements in part, or in their entirety, if you are transferring to one of the 23 campuses of the California State University System.

Merced College will give full certification upon the satisfactory completion of 39 designated units. In addition, a minimum of nine upper division units must be taken as designated by the state university conferring the B.A./B.S. Degree. If the CSU campus requires more than 48 General Education/Breadth units, you will take the additional units after transfer.

To complete the CSU transfer breadth requirements, students must select courses that fulfill the unit requirements of specific areas. (Courses listed in these areas may change, depending upon CSU Chancellor’s Office approval.) The CSU transfer breadth requirements appear on the following page.

SB 1440
The Student Transfer Agreement Reform Act (SB 1440 – Padilla), signed into legislation on September 29, 2010, enables the California Community Colleges and California State University to collaborate on the creation of Associate in Arts Degree (AA) and Associate in Science (AS) Degree transfer programs. This new law requires community colleges to grant an associate degree for transfer to a student once a student has met specified general education and major requirements for the degree. Upon completion of the associate degree, the student is eligible for transfer with junior standing into the California State University (CSU) system.

Students are given guaranteed admission into the California State University (CSU) system, and further are given priority consideration when applying to a particular program that is similar to the student's community college major. The law prohibits the CSU from requiring a transferring student to repeat courses similar to those taken at the community college that counted toward their associate degree for transfer. It is expected that community college students will be able to declare an interest in pursuing specific transfer AA/AS-T degrees. Currently, Merced College has four approved AA-/AS-T Degrees: Administration of Justice, Communication Studies, Mathematics, and Psychology.

University of California System (UC)
Of the ten University of California campuses, nine welcome community college transfer students (UCSF is only a graduate level university). UC campuses support a “transfer core curriculum”; however, each of the ten campuses and the individual majors has unique requirements. Students planning to transfer to a UC campus should see a Merced College counselor as soon as possible in order to plan an appropriate program of study and work closely with the UC representative in the Career/Transfer Center.

Private Colleges and Universities
There are approximately 112 independent or private schools in the State of California not supported by state tax revenues. They vary greatly in programs offered, size, and number of transfer students. Each school acts autonomously, evaluating course work on an individual basis. To obtain specific transfer information, contact the admissions office at the school to which you wish to transfer. A Merced College counselor can help you plan your transfer program.
CSU-GE BREADTH CERTIFICATION REQUIREMENTS 2012-2013

AREA A: English Language Communication and Critical Thinking
A minimum of 9 semester or 12-15 quarter units are required with one course from each of the following three areas:

A1 Oral Communication
COMM-01, 01H, 04, 05

A2 Written Communication
ENGL-01A

A3 Critical Thinking
ENGL/PHIL-13, ENGL/PHIL-13H, PHIL-10, 12, PHIL/ENGL-13, PHIL/ENGL-13H

AREA B: Scientific Inquiry and Quantitative Reasoning
A minimum of 9 semester or 12-15 quarter units are required with one course each from areas B1, B2, and B4. At least one of the courses must be a lab course from either area B1 or B2. (Lab courses are underlined):

B1 Physical Science
ARCH-01
ASTR-01, 01L
CHEM-02A, 02B, 04A, 04B
GEOG-01, 01L
PHYS-02A, 02B, 04A, 04B, 04C, 10
SOIL-10

B2 Life Science
ANTH-01
BIOL-01, 02, 04A, 04B, 04B1, 06, 08, 09, 12, 13, 16, 18, 20, 25
PLSC-10

B3 Laboratory Activity
A minimum of one lab course (underlined) from area B1 or B2

B4 Mathematics/Quantitative Reasoning
MATH-02, 02H, 04A, 04B, 04C, 05A, 05B, 06, 08, 10, 15, 20A, 20B, 25, 26
PSYC-05

AREA C: Arts and Humanities
A minimum of 9 semester or 12-15 quarter units are required with at least one course from each area:

C1 Arts (Art, Dance, Music, Theater)
ART-01, 02, 06, 12A, 15, 24A
DRAM-01, DRAM/ENGL-03
ENGL/DRAM-03, ENGL-14
MUS-01, 11, 12, 13, 14

C2 Humanities (Literature, Philosophy, and Foreign Language)
DRAM-01
ENGL-01B, 04A, 04B, 05, 06A, 06B, 07, 10, 11
ENGL/HUM-18
FREN-01, 02, 03, 04
GERM-01, 02, 03, 04
HMNG-01, 02
HUM-01, 01H, 02, 02H, 15, HUM/ENGL-18, 21
JPNS-01A, 01B, 02
PHIL-01, 01H, 03, 04, 05, 15
SPAN-01, 02, 03, 04, 10, 11

AREA D: Social Sciences
A minimum of 9 semester or 12-15 quarter units are required with courses in at least two disciplines:

D0 Sociology and Criminology
CRM-01
SOC-01

D1 Anthropology and Archaeology
ANTH-02, 10

D2 Economics
AGBS-11
ECON-01A, 01B

D3 Ethnic Studies
HIST-08A, 21, 22, 23, 24
HUM-15

D5 Geography
GEOG-02

D6 History
HIST-04A, 04B, 08A, 08B, 17A, 17AH, 17B, 17BH, 21, 22, 23, 24, 29

D7 Interdisciplinary Social or Behavioral Science
AGRI-10
COMM-30
SCSC-01

D8 Political Science, Government, and Legal Institutions
POSC-01, 02

D9 Psychology
PSYC-01A, 01AH, 15, 20, 22, 23, 25, 35, 36

AREA E: Lifelong Understanding and Self-Development
A minimum of 3 semester or 4-5 quarter units are required from the following:

CLDV-01, 02, CLDV/PSYC-09
GUID-30
HLTH-10, 16
NUTR-10
PSYC/CLDV-09, PSYC-22, 23, 35

AREA F: Merced College Courses Designated to Meet CSU History, Constitution, and American Ideals
All state universities have a U.S. History and a Federal, State, and Local Government requirement. Six units may be counted toward Area D or C2, in addition to Area F. See your counselor. Major requirements at the CSU campus of your choice may affect the ability to double count. You may complete either sequence A or B to meet the CSU History and Government requirements:

Sequence A:
HIST-17A or HIST-17AH (both meet US-1 and US-2)
AND
HIST-17B or HIST-17BH (both meet US-1 and US-3)
OR
Sequence B:
HIST-17A or HIST-17AH or HIST-17B or HIST-17BH or HIST-22 (US-1) AND
POSC-01 (US-2 AND US-3)

Students satisfy this CSU graduation requirement through coursework in three areas:
US-1: Historical development of American institutions and ideals
US-2: U.S. Constitution and government
US-3: California state and local government

Conditions:
● This requirement may be met before or after transfer to the CSU.
● Students who want to fulfill this requirement with courses taken before Fall, 2004 should consult their college catalogs.
● If a course is approved for more than one US Area above, a student may use the course to satisfy all areas listed.
● US-1 may be completed with a score of 3 or higher on Advanced Placement US History.
● US-2 (but not US-3) may be completed with a score of 3 or higher on Advanced Placement US Government & Politics.
● At the discretion of the CSU Campus granting the degree, courses meeting this requirement may also be counted toward certification in general education (GE Breadth or IGETC).

Check with your counselor for details.

BOLD = change since 11-12 catalog.
Courses which have been developed and recommended by the faculty of a regionally accredited college or university and designated as appropriate for baccalaureate credit shall be accepted by any campus of the California State University for credit toward its baccalaureate degrees (Executive Order #167). The following courses are considered transferable to any of the CSU system. Merced College courses numbered 1-49 are designated baccalaureate level courses transferable to the CSU system.

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GUID-48B  LAND-12  MGMT-33  PHED-01C  PSYC-01A-H  SONO-39B
GUID-48C  LAND-14  MGMT-34  PHED-01D  PSYC-01B  SONO-40
GUID-49A-ZZ  LAND-15  MGMT-37  PHED-01G  PSYC-05  SONO-41
HIST-04A  LAND-16  MKTG-30  PHED-01I  PSYC-09/CLDV-09  SONO-42A
HIST-04B  LAND-17  MKTG-31/  PHED-01J  PSYC-15  SONO-42B
HIST-08A  LBST-10  MDSE-31  PHED-01K  PSYC-20  SONO-43A
HIST-08B  LRNR-30  MDSE-32  PHED-02  PSYC-22  SONO-43B
HIST-09A  LRNR-49A-ZZ  MKTG-33/  PHED-03  PSYC-25  SONO-44A
HIST-09B  MATH-02  MDSE-33  PHED-10A-H  PSYC-33/  SONO-44C
HIST-17A  MATH-02H  MUS-01  PHED-11A-E  SOC-33/  SONO-45A
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HIST-17B  MATH-04B  MUS-04A  PHED-13A-H  PSYC-35  SONO-45C
HIST-17BH  MATH-04C  MUS-04B  PHED-14A/  PSYC-36  SONO-46A
HIST-21  MATH-05A  MUS-04C  DNCE-14A  PSYC-49AA-ZZ  SONO-49A-ZZ
HIST-22  MATH-05B  MUS-04D  DNCE-14B/  RADT-40  SONO-4A
HIST-23  MATH-06  MUS-11  DNCE-14C  RADT-41  SPAN-01
HIST-24  MATH-08  MUS-12  PHED-14C/  RADT-42  SPAN-02
HIST-29  MATH-10  MUS-13  DNCE-14D1/  RADT-43A  SPAN-03
HIST-39A  MATH-12/  MUS-14  DNCE-14D1  RADT-44A  SPAN-04
HIST-39B  CPSC-12/  MUS-24A  DNCE-14D  RADT-44B  SPAN-10
HIST-39C  ENGR-12  MUS-24B  DNCE-14D2/  RADT-45A  SPAN-11
HLTH-10  MATH-14/  MUS-24C  DNCE-14D2  RADT-45B  SPAN-35
HLTH-15  MATH-15  MUS-27A  DNCE-14D3  SPAN-45C  SPMD-41
HLTH-16  MATH-20A  MUS-27B  PHED-15  SPAN-42  SPMD-42
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HMNG-03  MATH-26  MUS-28  PHED-32  REAL-45  STGV-33B
HNRS-39  MATH-49A-F  MUS-36A  PHED-36ABCD  REAL-48  STGV-33C
HUM-01  MDSE-31/  MUS-36B  PHIL-01  REAL-49  STGV-33D
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HUM-18  MKTG-33  MUS-41B  PHIL-10  REGN-16  VOCN-46A
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INDT-36A-Z  MECH-23  NUTR-10  PHSC-01  SCI-30A-D  WELD-48
INDT-38  MECH-24  NUTR-20  PHSC-01L  SCSC-01  WELD-49
INDT-40  MECH-26  NUTR-26A  PHYS-02A  SOC-01  WELD-49A-ZZ
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JOUR-08  MECH-33  NUTR-39/CLDV-39  CLDV-33/  PSYC-33
JOUR-32  MECH-34  NUTR-40  PHYS-10  PSYC-39
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JPRS-01B  MECH-40  NUTR-42  SOIL-11  PSYC-40
JPRS-02  MECH-45/WELD-  NUTR-43  SONO-36B
KINE-01  NUTR-44  SONO-36C
Completion of the IGETC permits a student to transfer from Merced College to a campus in either the California State University or the University of California system without the need after transfer to take additional, lower division, general education courses to satisfy the campus GE requirements. IGETC is not recommended for majors that require extensive lower division preparation. Consult with your counselor. Students may also fulfill the general education requirements by completing the specific lower division breadth and general education requirements of the school or college of the campus to which the student intends to transfer. Students intending to transfer to the California State University System may also complete the requirement by fulfilling the CSU’s general education requirement.

Both the California State University and the University of California have a specific American Institutions requirement that is separate from their general education requirements. Completion of the IGETC will not satisfy the American Institutions requirement. Courses used to satisfy the American Institutions requirement may not be counted to satisfy either a Humanities or a Social and Behavioral Science requirement.

**AREA 1: English Communication**
(CSU - Three courses, one each from Groups A, B, & C)
(UC - Two courses, one each from Groups A and B)

**Group A: English Composition**
(One course: three semester units)
ENGL-01A

**Group B: Critical Thinking**
(One course: three semester units)
ENGL/PHIL-13*
ENGL/PHIL-13H+
PHIL/ENGL-13*
PHIL/ENGL-13H+

**Group C: Oral Communication (CSU REQUIREMENT ONLY)**
COMM-01A, 01H+

**AREA 2: Mathematical Concepts and Quantitative Reasoning**
(One course: three semester units)
MATH-02+, 04A+, 04B+, 04C+, 05A+, 05B+, 06, 08, 10, 15, 26+

**AREA 3: Arts & Humanities**
(Three courses: nine semester units, with at least one course from the Arts and one course from the Humanities)

**3A. Arts**
ART-01, 02,
DRAM/ENGL-03
ENGL/DRAM-03
ENGL-14
HUM-21
MUS-01, 11, 12, 13, 14

**3B. Humanities**
DRAM-01
ENGL-01B+, 04A, 04B, 05, 06A, 06B, 07, 10, 11, ENGL/HUM-18
FREN-03*, 04*
GERM-02*, 03*, 04*
HIST-04A, 04B, 08A*, 08B*, 09A, 09B, 17A*, 17AH*, 17B*, 17BH*,
HUM-01+, 01H+, 02+, 02H+, 15*, HUM/ENGL-18
PHIL-01+, 01H+, 03, 04, 05, 15
SPAN-02+, 03+, 04*, 10*, 11*

**AREA 4: Social & Behavioral Sciences**
(Three courses: nine semester units, with courses from at least two disciplines or an interdisciplinary sequence.)

**4A. Anthropology and Archaeology**
ANTH-02, 10

**4B. Economics**
ACGS-11
ECON-01A, 01B

**4C. Ethnic Studies**
HIST-08A*, 21+, 22+, 23+, 24+
HUM-15*

**4D. Geometric Reasoning**
GEOM-01

**4E. Geography**
GEOG-02

**4F. History**
HIST-08B*, 17A*, 17AH*, 17B*, 17BH*, 21+, 22+, 23+, 24+

**4G. Interdisciplinary, Social & Behavioral Sciences**
CLDV-01
COMM-30
GEOL-02*
SCSC-01+

**4H. Political Science & Government & Legal Institutions**
POSC-01, 02

**4I. Psychology**
PSYC-01A*, 01AH+, 15, 20, 22, 23, 25, 35, 36

**4J. Sociology & Criminology**
SOC-01

**AREA 5: Physical & Biological Sciences**
(Two courses required, 7-9 semester units, one Physical Science course and one Biological Science course; at least one must include a laboratory.)

**5A. Physical Science**
Underlined courses have a laboratory component.
ARCH-01
ASTR-01, 01L
CHEM-02A+, 02B+, 04A, 04B
GEOG-01, 01L
GEOL-01, 02*
PHSC-01*, 01L
PHYS-02A+, 02B+, 04A+, 04B+, 04C*, 10+
SOIL-10

**5B. Biological Science**
Underlined courses have a laboratory component.
ANTH-01
Biol-01*, 02, 04A, 04AH, 04B, 04BH, 06, 08, 09, 12, 13, 16, 18, 20, 25
PLSC-10

**AREA 6: Language Other Than English (UC ONLY)**
Proficiency equivalent to two years of high school study in the same language. The following course(s) at this institution fulfill the requirement. Courses above proficiency level (# sign) may also be used to meet this requirement.
FREN-01, 02, 03*, 04*
GERM-01, 02*, 03*, 04*
HMG-01, 02
JPN-01B, 02
SPAN-01+, 02*, 03*, 04*, 10*, 11*

*Transfer Credit is limited by UC or CSU or both. Please consult with a counselor.
*Courses listed in multiple areas shall not be certified in more than one area except for courses in Area 6, Language Other Than English, which can be certified in both Areas 3B and 6A.
IMPORTANT INFORMATION ABOUT UC'S TRANSFERABLE COURSE AGREEMENTS

Variable Topics Courses:
These courses are also called "Independent Studies", "Special Studies", "Special Topics", "Field Work", etc. Credit for variable topics courses is given only after a review of the scope and content of the course by the enrolling UC campus. This usually occurs after transfer and may require recommendations from faculty. Information about internships may also be presented for review, but credit for internships rarely transfers to UC. UC does not grant credit for variable topics courses in Journalism, Photography, Health, Business Administration, Architecture, Administration of Justice (Criminology) or Library Departments because of credit restrictions in these areas.

Honors Course Credit Limitation:
Duplicate credit will not be awarded for both the honors and regular versions of a course. Credit will only be awarded to the first course completed with a grade of C or better.

Course Repeatability:
An "ea" after the unit value of a course on this agreement is meant to indicate that the course may be repeated for credit under CCC campus policies. Since campus policies on repeatability vary, the "ea" indicator does not guarantee that UC will grant credit for every course that appears multiple times on a student's transcript.

LEGEND:
*ANSC-12 & ANSC-15 combined: maximum credit, one course
*ANTH 30: No Credit for ANTH-30 if taken after ANTH-01 or 02
*BIOI-01: No credit for BIOI-01 if taken after BIOI-04
○CHEM-02A and CHEM-02B combined: maximum credit, one course
*ENGL-22 and LRNR-30 combined: maximum credit, one course
*ENGR-12 and ENGR-14 combined: maximum credit, one course
**FREN-01: corresponds to two years of high school study
**GERM-01: corresponds to two years of high school study
*HIST-21, 22, 23, 24: Any or all of these courses combined; maximum credit, one course
**HMNG-01: corresponds to two years of high school study
**JPNS-01B: corresponds to two years of high school study
*LAND-10A and 10B combined: maximum credit, one course
+MATH-02 and 26 combined: maximum credit, one course
*MATH-04A, 04C, 04D and 05A, 05B combined: maximum credit, one series
○MATH-12 and MATH-14 combined: maximum credit, one course
**MATH-20A, 20B, and 21 combined: maximum credit, one course
*PHED: Any or all of these PE activity courses combined: maximum credit, 4 semester units
+PHED: Any or all of these courses combined: maximum credit, 8 semester units
*PHSC-01: No credit for PHSC-01 if taken after a college level courses in Astronomy, Geology, or Physics
*PHYS-02A, 02B, 04A, 04B, 04C combined: maximum credit, one series; deduct credit for duplication of topics
+PHYS-10: No credit if taken after PHYS-02A or PHYS-04A
*SCSC-01: No credit if taken after a college level course in Anthropology, History, Political Science, Psychology, or Sociology
*SPAN-01 and 10 combined: maximum credit one course – corresponds to two years of high school study
○SPAN-02 and SPAN-11 combined: maximum credit, one course
+SPAN-39 must be taken for a minimum of 3 units to receive transfer credit
**SPMD-42 and SPMD-43 combined: maximum credit, one course
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ENGLISH AS A SECOND LANGUAGE AND PRE-COLLEGE ENGLISH SEQUENCE 2012-2013

- Degree applicable courses
- Transferable
- Meets the English Competency requirements
- Intermediate Non-Degree applicable basic skills courses
- Non Transferable
- Does not meet the English Competency requirements
- Non degree applicable basic skills courses
- Non Transferable
- Does not meet the English Competency requirements
- Suggested concurrent enrollment

ENGL-01A (4 units)
College Composition and Reading

ENGL-85 (5 units)
Foundations in Academic Literacy

ENGL-81 (3 units)
Foundations in Reading III

ENGL-81L (1 unit)
Reading Lab III

ENGL-80 (3 units)
Foundations in Reading II

ENGL-80L (1 unit)
Reading II Lab

ENGL-84 (5 units)
Foundations in Writing III

ENGL-84 (5 units)
Foundations in Writing II

ESL-92B (5 units)
ESL Reading and Writing 2

ESL-92A (5 units)
ESL Reading and Writing 1

ESL-96 (3 units)
High-Intermediate ESL Grammar I

ESL-95 (3 units)
Intermediate ESL Grammar

ESL-98 (3 units)
ESL Pronunciation and Speaking

ENGL-90 (4 units)
Foundations in Reading and Writing I

ESL-95 (3 units)
Intermediate ESL Grammar

ESL-98 (3 units)
ESL Pronunciation and Speaking

NON-CREDIT ESL
MATHEMATICS SEQUENCE 2012-2013

MATH-08
Linear Algebra

MATH-06
Differential Equations

MATH-05B
Applied Calculus

MATH-05A
Applied Calculus

MATH-04C
Multivariable Calculus

MATH-04B
Calculus II

MATH-04A
Calculus I

MATH-26 AND MATH-25 REQUIRED

MATH-02
or MATH-02H
Precalculus

MATH-26
College Algebra

MATH-25
Trigonometry

MATH-10
or PSYC-05
Statistics

MATH-15
Finite Math

MATH-20A
Basic Structure of Math I

MATH-20B
Basic Structure of Math II

MATH-C
OR
MATH-D
Intermediate Algebra
Technical Math

MATH-B
Applied Math

MATH-81
Beginning Algebra

MATH-80
Prealgebra

MATH-91
Decimals & Fractions

MATH-90
Arithmetic

 réal applicables
transferable
meets the Math Competency requirements

real applicable
non transferable
meets the Math Competency requirements

non degree applicable basic skills courses
non transferable
does not meet the Math Competency requirements

non degree applicable courses
transferable
meets the Math Competency requirements

real applicable
non transferable
meets the Math Competency requirements

non degree applicable basic skills courses
non transferable
does not meet the Math Competency requirements
Community Services
The Community Services program at Merced College has been an integral part of the College’s commitment to provide education, enrichment, and adventure to the community. The Community Services Program offers the community an alternative that does not exist in the regular instructional program. To receive more information, call (209) 384-6224 and/or visit www.mccd.edu/community.

Classes
Community Service fee-based classes are offered by Merced College to district residents interested in studying specific interests and enrichment areas. Online (Internet) classes are offered throughout the year.

Special Programs for Children and Young Adults
The Community Services Office maintains a variety of programs during the traditional summer session and throughout the year including College for Kids classes, sports camps and workshops, swimming programs, and summer theater.

Performing Arts
Community Services, from time to time, contracts with artists for theater performances including special assemblies for local schools. Additionally, the program sponsors a cooperative of dance instructors to provide public performances to benefit local scholarship programs.

Workshops and Seminars
These programs deal with community problems and topics of current interest. They are conducted in cooperation with special interest groups and other community organizations.

Trips & Tours
Bus tours to museums, historic sites, sporting events, and to dramatic and musical performances in other areas of California are planned throughout the year. Nominal fees are charged to offset the cost of the performances and transportation. Escorted tours to locations throughout the world are also offered each year.

Traffic Safety School
Merced College is licensed by the Department of Motor Vehicles to provide this course for adults and juveniles. With permission from the court of jurisdiction, taking this course will prevent your citation from appearing on your record. Traffic School Online, in English and in Spanish, is also available.

Employer-focused Training Center (ETC)
The Employer-Focused Training Center also known as the Career Advancement Academy is dedicated to meeting the needs of employees and job seekers interested in short term vocational training. Courses available include the Technical Office Occupations program and the Medical Assistant program. Both of these programs are located at the Merced College Business Resource Center in downtown Merced. For more information about ETC and the Career Advancement Academy call (209) 386-6738.

Center for International Trade Development (CITD)
The Center for International Trade Development (CITD) is one of five centers located in the state to provide small to medium sized businesses with one-on-one export and import counseling, technical assistance, training, and market research. The CITDs enhance the competitive strength of California businesses in the international trade marketplace and support international trade development in their local and regional communities. The network has existing working relationships with local, industry, federal and international partners, and has contractual relationships with the Small Business Administration, U.S. Department of Commerce, International Trade Administration, the Western United States Agricultural Trade Association, US Agency for International Development, and the U.S. Department of Education, Business and International Education Programs. CITDs serve over 2000 California businesses each year and offer the following value-added services:

- Individualized assistance to help existing companies and new ventures strategically evaluate and pursue international business opportunities
- International business conferences, workshops and seminars designed to provide information and tools to help enterprises, and organizations capitalize on global business
- Reference and referral services for specific customs, regulatory, and operational challenges
- International matchmaking services to include introducing California companies to potential trading partners through overseas trade missions, hosting of inbound delegations and trade leads distribution
- Assist community colleges in internationalizing their curricula and developing specialized programs and courses in international trade to help prepare California’s workforce to compete and contribute in the global economy.

To learn more, phone (209) 384-5892.

Workplace Learning Resource Center
The Workplace Learning Resource Center (WpLRC) provides local employers and citizens of the Central Valley and greater Merced area with customized training, leadership, and development programs. The programs offered are exceptional enhancement skills that employees can apply immediately to their job upon completion of the training. Since its inception in 1994, the WpLRC has increased Merced College’s capacity to deliver training services to regional businesses, industry partners, and individuals through research, in-service training, and the development and implementation of innovative training options.

The WpLRC supports essential elements of the California Community College Mission and Goals, which is to advance California’s economic growth and global competitiveness through education, training, and services that contribute to continuous workforce improvement.

For more information, call (209) 386-6733 or visit www.mercedworkplacecenter.org.
Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address: https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
Making good decisions is critical for success in any business enterprise. Accounting plays a vital role in providing information needed to make knowledgeable financial decisions. The information supplied by accounting is in the form of quantitative data, primarily financial in nature, and relates to specific economic entities. An economic entity may be an individual, a business enterprise, or a nonprofit organization. Every entity, regardless of its size or purpose, must have a way to keep track of its economic activities and to measure how well it is accomplishing its goals. Accounting provides the means for tracking activities and measuring results.

Without accounting information, many important financial decisions would be made blindly. Investors, for example, would have no way to distinguish between a profitable company and one that is on the verge of failure; bankers could not evaluate the riskiness of potential loans; managers would have no basis for controlling costs, setting prices, or controlling the company’s resources; and government would have no basis for taxing income.

Thus, accounting is a service activity designed to accumulate, measure, and communicate financial information to various decision makers, such as investors, creditors, and managers.

Career Opportunities
Many career opportunities are available in accounting requiring varying amounts of education and experience. Listed below are some of the common accounting positions:
- Accounting Clerk
- General Bookkeeper
- Junior Accountant
- Accountant
- Public Accountant
- Private Accountant
- Not-for-profit Accountant
- Auditor

DEGREE
A.A. - Accounting

CERTIFICATE
Accounting

Highlights
Great Job Opportunities
Better understanding of business

DEGREE (10/07)
A.A. - Accounting (05000.AA)

An Associate in Arts Degree in Accounting is available in preparation for employment in the field of bookkeeping or accounting as a full-charge bookkeeper or junior accountant. For the A.A. Degree, students must meet the graduation requirements and complete the following courses.

Program Student Learning Outcomes
A. Read, analyze, evaluate, and communicate, both orally and in written form, an appropriate financial interpretation of accounting documents, including proper maintenance of accounting records using the basics of bookkeeping.
B. Analyze an accounting problem and/or scenario and apply appropriate mathematical and accounting concepts to develop and verify a solution.
C. Analyze and apply critical/creative thinking to an accounting problem or scenario in order to formulate a set of alternatives, then recommend the best course of action.

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<td>ACTG-31</td>
<td>Computerized Accounting</td>
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<td>ACTG-51</td>
<td>Applied Accounting</td>
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<td>BUS-18A</td>
<td>Business Law</td>
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Suggested electives include:
- BUS-43 Business Communication
- CPSC-01 Introduction to Management Information Systems
- ECON-01A Introduction to Macroeconomics
- ECON-01B Introduction to Microeconomics
- MATH-10 Elementary Statistics
- MATH-15 Finite Mathematics
CERTIFICATE
Accounting (05000.CT)

A Certificate of Achievement will be awarded upon the satisfactory completion of 30 units of course work in this area of study which includes the core courses indicated for the A.A. Degree in Accounting.

Program Student Learning Outcomes
A. Read, analyze, evaluate, and communicate, both orally and in written form, an appropriate financial interpretation of the material, including proper maintenance of accounting records using the basics of bookkeeping.
B. Analyze, make computations and solve a variety of complex accounting problems and scenarios.
C. Apply analytical and critical thinking skills to contemplate a given accounting scenario and propose a solution after contemplating a variety of courses of action.

Units

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Total Units: 30

Recommended Sequence: A.A. - Accounting (05000.AA)

Fall 1

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Spring 1

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Fall 2

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<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ACTG-04B</td>
<td>Managerial Accounting</td>
<td>4</td>
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Plus three units from the following:

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<tr>
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<tbody>
<tr>
<td>ACTG-52</td>
<td>Payroll Records and Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACTG-53</td>
<td>Fundamentals of Income Tax Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACTG-54</td>
<td>Cost Accounting</td>
<td>3</td>
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<tr>
<td>ACTG-56</td>
<td>Governmental and Not-For-Profit Accounting</td>
<td>3</td>
</tr>
<tr>
<td>ACTG-70A-ZZ</td>
<td>Special Topics in Accounting</td>
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</table>

Spring 2

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ACCOUNTING (ACTG)

ACTG-04A  FINANCIAL ACCOUNTING
4 units: 4 hours lecture.
Advisories: ACTG-51; ENGL-85.
This course provides the student with the knowledge of corporate financial statement reporting and the ability to analyze the reports of a corporation. Basic topics include analysis of transactions and preparation of financial statements related to developing an understanding of the financial condition of a corporation. This accounting course is recommended for students who have knowledge of or equivalent experience in the basics of bookkeeping. (2/11)

ACTG-04B  MANAGERIAL ACCOUNTING
4 units: 4 hours lecture.
One-way corequisite: ACTG-04A or ACTG-51. Advisory: MATH-81 or MATH-B.
This course provides students with instruction in managerial accounting. Topics include job-order and process costing, cost-volume-profit relationships, the contribution approach to costing, budgeting, standard costing, capital budgeting and investment decisions, and relevant costs for decision making. (12/06)

ACTG-31  COMPUTERIZED ACCOUNTING
2 units: 1 hour lecture, 3 hours lab.
Prerequisite: ACTG-04A or ACTG-51. Advertisers: CPSC-30; ENGL-85.
This course provides instruction in computer-assisted accounting. Topics include general ledger setup, accounts receivable setup, accounts payable setup, transactions and reports, financial statement analysis, depreciation, and payroll. (2/11)

ACTG-51  APPLIED ACCOUNTING
4 units: 4 hours lecture.
Advisories: ENGL-81; MATH-80.
This course is an entry-level accounting course emphasizing a preparer approach using manual accounting methods, and comparing them to current computerized accounting. Basic course work during the first half of the semester relates to the sole proprietorship type organization. During the second half of the course the emphasis changes to cover the basis of partnership and corporate accounting. Students will become acquainted with not only the theory and terminology associated with the accounting cycle and within an accounting system. Other topics in accounting may also be covered including payroll, cash, inventory, bad debts, and depreciation. (12/06)

ACTG-52  PAYROLL RECORDS AND ACCOUNTING
3 units: 3 hours lecture.
One-way corequisite: ACTG-04A or ACTG-51. Advisories: ENGL-85; MATH-80.
This course acquaints the student with various phases of the Fair Labor Standards Act (FLSA), Social Security Act, and other laws relating to the payment of wages and salaries. Basic payroll accounting systems and procedures as well as the timekeeping methods used to record time worked are described. Computerized accounting systems and pertinent tax forms are also explored. (2/07)

ACTG-53  FUNDAMENTALS OF INCOME TAX ACCOUNTING
3 units: 3 hours lecture.
Advisories: ACTG-51 or ACTG-04A; ENGL-85.
This course provides the student with the knowledge of tax laws, accounting procedures, and preparation of required returns for federal income taxes. An introduction to partnership and corporate taxation, as well as a brief overview of tax administration, will supplement the course material. (2/11)
ACTG-54 COST ACCOUNTING
3 units: 3 hours lecture.
One-way corequisite: ACTG-04A or ACTG-51. Advisories: ENGL-85; MATH-80.
This course provides a thorough understanding of cost concepts, cost behavior, and cost accounting techniques as applied to manufacturing and service businesses. Students will learn how to accurately determine product and service costs using various costing methods. The student will also become aware of how the cost techniques used can affect the performance of both workers and management. Managerial control through budgeting is also addressed. (12/06)

ACTG-56 GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING
3 units: 3 hours lecture.
Prerequisite: ACTG-04A or ACTG-51. Advisories: ENGL-85; MATH-80.
Accounting theory and practice are applied to governmental and not-for-profit accounting. Topics include practical understanding of budgeting, accounting, and financial reporting as it applies to governmental and not-for-profit organizations. (2/07)

ACTG-70A-ZZ SPECIAL TOPICS IN ACCOUNTING
0.5 - 3 units: 0.5 - 3 hours lecture, 0 - 3 hour lab.
Prerequisite: ACTG-04A or ACTG-51.
This course is designed to address special topics in accounting to meet the current needs of students. It will provide accounting students with access to instruction that will assist them in acquiring the up-to-date information and skills necessary to meet their career goals in a rapidly changing business environment. (1/05)
Addiction Studies
Allied Health, Business, and Public Safety

DEGREE
A.A. - Addiction Studies

CERTIFICATE
Addiction Studies

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Addiction Studies Program is designed to provide students with the knowledge and skills required to begin the certification process for and work in California drug treatment settings. It also provides opportunities for general knowledge about addiction and addiction treatment. The program leads to an Associate’s Degree in Addictions Studies or a Certificate of Achievement.

Career Opportunities
With sufficient hours of clinical practice and successful completion of the CATC examination entry level employment as a certified addiction counselor in addiction treatment practice in the public and private sector may be available.

Highlights
Understanding of the addiction process
Acquiring and practice of counseling skills

Note to transfer students
Many four year institutions do not offer a specialized major in this field. Seek the assistance of a guidance counselor if you plan to transfer.

DEGREE
A.A. - Addiction Studies (21050.AA)

The Associate in Arts Degree in Addiction Studies, which is fully accredited by the California Association for Alcohol and Drug Educators (CAADE), is available for students who meet the graduation requirements and complete the following required courses with a 2.0 GPA or higher in each class.

Program Student Learning Outcomes
A. Distinguish among a variety of models and theories of addiction.
B. Recognize the social, political, economic, and cultural context within which addition and substance abuse exist, including risk and resiliency factors that characterize individuals and groups and their living environments.
C. Distinguish among the confounding factors/symptoms of the co-occurring disorder/dual diagnosis client.
D. Compare the philosophies, practices, policies, and outcomes of the most generally accepted and scientifically supported models of treatment, recovery, relapse prevention, and continuing care for addiction and other substance-related problems.
E. Differentiate between the established diagnostic criteria for substances use disorders and describe treatment modalities and placement criteria within the continuum of care.
F. Examine the diverse cultures and incorporate the relevant needs of culturally diverse groups, as well as people with disabilities, into clinical practice.
G. Understanding the obligation of the addiction professional to participate in prevention as well as treatment.

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<tr>
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<tr>
<td>3</td>
<td>ADST-41</td>
<td>Introduction to Addiction Studies</td>
</tr>
<tr>
<td>3</td>
<td>ADST-42A</td>
<td>Screening, Assessment, and Treatment Planning in</td>
</tr>
<tr>
<td>3</td>
<td>ADST-42B</td>
<td>Addiction Counseling Skills</td>
</tr>
<tr>
<td>3</td>
<td>ADST-43</td>
<td>Professional Responsibilities and Ethical Practice in Addiction Counseling</td>
</tr>
<tr>
<td>3</td>
<td>ADST-44</td>
<td>Pharmacology of Substance Abuse</td>
</tr>
<tr>
<td>3</td>
<td>ADST-45</td>
<td>Leadership and Counseling in Addiction Groups</td>
</tr>
<tr>
<td>3</td>
<td>ADST-46</td>
<td>Addiction Education and Prevention</td>
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<tr>
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<td>ADST-47</td>
<td>Co-occurring Disorders</td>
</tr>
<tr>
<td>3</td>
<td>COOP-41</td>
<td>Cooperative Education</td>
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<td>3</td>
<td>HMSV-50</td>
<td>Survey and Utilization of Community Resources</td>
</tr>
<tr>
<td>3</td>
<td>PSYC-01A</td>
<td>Introduction to Psychology</td>
</tr>
</tbody>
</table>

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CERTIFICATE
Addiction Studies (21050.CT)

A fully accredited CAADE Certificate of Achievement will be awarded upon the satisfactory completion of the 36-unit curriculum listed below plus an additional six units from the following electives with a 2.0 GPA or higher in each class.

Program Student Learning Outcomes
A. Recognize the social, political, economic, and cultural context within which addiction and substance abuse exist, including risk and resiliency factors that characterize individuals and groups and their living environments.
B. Distinguish among a variety of models and theories of addiction.
C. Distinguish among the confounding factors/symptoms of the co-occurring disorder/dual diagnosis client.
D. Compare the philosophies, practices, policies, and outcomes of the most generally accepted and scientifically supported models of treatment, recovery, relapse prevention, and continuing care for addiction and other substance-related problems.
E. Differentiate between the established diagnostic criteria for substances use disorders and describe treatment modalities and placement criteria within the continuum of care.
F. Examine the diverse cultures and incorporate the relevant needs of culturally diverse groups, as well as people with disabilities, into clinical practice.
G. Understanding the obligation of the addiction professional to participate in prevention as well as treatment.

Units
ADST-41 Introduction to Addiction Studies.................................3
ADST-42A Screening, Assessment, and Treatment Planning in Addiction Counseling.................................................................3
ADST-42B Introduction to Addiction Counseling Skills .................3
ADST-43 Professional Responsibilities and Ethical Practice in Addiction Counseling.................................................................3
ADST-44 Pharmacology of Substance Abuse................................3
ADST-45 Leadership and Counseling in Addiction Groups...........3
ADST-46 Addiction Education and Prevention............................3
ADST-47 Co-occurring Disorders..............................................3
COOP-41 Cooperative Education................................................6
HMSV-50 Survey and Utilization of Community Resources............3
PSYC-01A Introduction to Psychology.........................................3
ADST-49A-ZZ  SPECIAL TOPICS IN ADDICTION STUDIES...........½ -4

Plus six units from the following:
ADST-41A-ZZ Special Topics in Addiction Studies......................1½ -4
CLDV-02 Child, Family and Community.....................................3
COMM-05 Interpersonal Communication..................................3
CPSC-30 Computer Applications...............................................3
CRIM-33 Family Violence..........................................................3
HLTH-10 Contemporary Health..................................................3
PSYC-22 Human Sexuality............................................................3
PSYC-51 Applied Psychology......................................................3
SOC-01 Introduction to Sociology..............................................3
SOC-02 Contemporary Social Problems......................................3
SOC-28 Marriage and the Family................................................3

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ADDITION STUDIES (ADST)
ADST-41 INTRODUCTION TO ADDICTION STUDIES
3 units: 3 hours lecture.
Advisory: ENGL-85.
This is an introductory course which provides information on myths, theory, identification of, and the functions of family and social setting in addiction and recovery. Treatment, recovery, and relapse prevention models will be presented. (2/09)

ADST-42A SCREENING, ASSESSMENT, AND TREATMENT PLANNING IN ADDICTION COUNSELING
3 units: 3 hours lecture.
This course is designed to give the student an introduction to counseling skills of screening, clinical evaluation, assessment, and treatment planning. (2/09)

ADST-42B INTRODUCTION TO ADDICTION COUNSELING SKILLS
3 units: 3 hours lecture.
Prerequisite: ADST-42A. Advisory: ENGL-85.
This course is oriented to counseling the alcoholic/chemically dependent client. Course work is designed to give the student an introduction to counseling skills and classroom experience in applying basic counseling skills with individuals and groups. (2/09)

ADST-43 PROFESSIONAL RESPONSIBILITIES AND ETHICAL PRACTICE IN ADDICTION COUNSELING
3 units: 3 hours lecture.
This course focuses on professional responsibilities in addiction counseling. Awareness of state and federal laws and regulations, and the code of conduct governing the behavior of alcohol and drug counselors are examined. Effective approaches and the examination of legal, ethical, and moral responsibilities and referral practices of the alcohol/drug counselor will also be presented. (2/09)

ADST-44 PHARMACOLOGY OF SUBSTANCE ABUSE
3 units: 3 hours lecture.
Prerequisite: ADST-41. Advisory: ENGL-85.
This course provides a basic understanding and working knowledge of the classifications of drugs based on their effects on behavior, emotions, perceptions, consciousness, the metabolism of drugs, and neurotransmitter theory. The political, social, and cultural issues will be briefly explored. (2/09)

ADST-45 LEADERSHIP AND COUNSELING IN ADDICTION GROUPS
3 units: 3 hours lecture.
One-way corequisite: ADST-42B. Advisory: ENGL-85.
This course is an introduction to the dynamics of group counseling with clients with substance use disorders. The group will study itself, under supervision, and learn various leadership skills. The factors involved in problems of communication, effective emotional responses, and personal growth will be highlighted. (2/09)

ADST-46 ADDICTION EDUCATION AND PREVENTION
3 units: 3 hours lecture.
One-way corequisite: ADST-44. Advisories: ENGL-85.
This course presents basic concepts that provide the foundation upon which homeostasis is maintained in adults and/or children. Common threads integrated throughout the program are initiated: nursing process, nutrition, pharmacology, development levels, cultural diversity, communication, and professional role. (2/09)

ADST-47 CO-OCCURRING DISORDERS
3 units: 3 hours lecture.
Prerequisite: ADST-42B. One-way corequisite: ADST-43. Advisory ENGL-85.
This course focuses on assessing mental disorders associated with an addiction. Skills in recognizing co-occurring disorders, treatment planning, case management, appropriate scope of practice and utilization of community resources will be examined. (2/09)

ADST-49A-ZZ SPECIAL TOPICS IN ADDICTION STUDIES
0.5 - 4 units: 0.5-4 hours lecture.
Advisory: ENGL-85.
This course is designed to address special topics in addiction studies to meet the current needs of students. The course will allow pre-service and in-service personnel to maintain the most current education and training standards in the field. (05/09)
Administrative Office Management
Allied Health, Business, and Public Safety

DEGREES
A.A. - Administrative Medical Office Professional
A.A. - Administrative Office Professional

CERTIFICATES
Administrative Medical Office Professional
Administrative Office Professional

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https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
Becoming an administrative professional is a solid choice for the future. The US Department of Labor reports more than 4.2 million people were employed as administrative assistants and secretaries in 2006, with another 362,000 jobs expected to be added by 2016, an 8.5 percent increase over the 10-year period. The Administrative Office Management program provides training in the office and technology skills required by administrative office professionals, such as: document preparation, storage and retrieval with an emphasis on electronic record keeping; integrated computer software applications; organization and scheduling; Internet/Intranet communications and research; customer service and public relations. Our program is versatile – train for the Degree, a Certificate or simply update/refresh skills that you may already have.

Career Opportunities
• Office Assistant
• Administrative Assistant
• Data Entry Specialist
• Customer Service Representative
• Receptionist
• Medical Assistant
• Front Desk Coordinator
• Public Relations Office Assistant
• Advertising Assistant
• Medical Transcriber

Highlights
Versatile program with online offerings
Most current computer applications and workplace/customer service skills

DEGREE (11/09)
A.A. - Administrative Medical Office Professional (05007.AA)

Refer to the general education requirements for specific information regarding general education, unit and scholarship requirements. Completion of the certificate program, in addition to the general education and district requirements, qualifies the student for an Associate in Arts Degree.

Program Student Learning Outcomes
A. The student will develop the necessary skills to perform medical office responsibilities in a professional environment

Core Courses (required of all Administrative Office Professional majors.)

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<thead>
<tr>
<th>Units</th>
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<tbody>
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<td>AOM-50B</td>
<td>Document Formatting &amp; Keyboarding</td>
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<td>AOM-56</td>
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<td>AOM-53</td>
<td>Advanced Computer Applications</td>
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<td>Web Site Development</td>
</tr>
<tr>
<td>3</td>
<td>AOM-59</td>
<td>Medical Coding &amp; Billing</td>
</tr>
</tbody>
</table>

52
**DEGREE**  (11/09)
A.A. - Administrative Office Professional
(05008.AA)

Refer to the general education requirements for specific information regarding general education, unit and scholarship requirements. Completion of the certificate program, in addition to the general education and district requirements, qualifies the student for an Associate in Arts Degree.

Program Student Learning Outcomes
A. The student will develop the necessary skills to perform administrative responsibilities in an office environment.

Core Courses (required of all Administrative Office Management majors.)

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26 units total

**CERTIFICATE**  (11/09)
Administrative Medical Office Professional
(05007.CT)

A Certificate of Achievement will be awarded upon the successful completion of the 22-unit core plus the program option listed below.

Program Student Learning Outcomes
A. The student will develop the necessary skills to perform medical office responsibilities in a professional environment.

Core Courses (required of all Administrative Office Management majors.)

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32 units total
Classes interchangeable between semesters

ADMIRISTRATIVE OFFICE MANAGEMENT (AOM)

AOM-50A KEYBOARDING
1 unit: 5 hours lecture, 1.5 hours lab.
Advisories: ENGL-81, ENGL-84.
This course includes development of basic computerized keyboarding techniques by touch, and speed and accuracy. (11/06)

AOM-50B Document Formatting & Keyboarding
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-81, ENGL-84.
This course includes: (1) fundamental knowledge of word processing software to properly format memorandums, letters, envelopes and reports with tables and (2) development of basic computerized keyboarding techniques. (11/09)

AOM-51 KEYBOARDING/WORD PROCESSING
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: AOM-50B (25 wpm, 95% accuracy). Advisories: ENGL-81, ENGL-84.
This course provides instruction and review of computerized keyboarding using word processing software; emphasis is placed on formatting memorandums, business letters, business forms, legal and medical documents, tables, and reports, as well as keyboarding with speed and accuracy. (2/11)

AOM-52A KEYBOARDING SPEED AND ACCURACY
1 unit: 1 hour lecture, 3 hours lab.
Advisories: Know the keyboard and be able to key at least 20 wpm with 85% accuracy; ENGL-81, ENGL-84.
This course is designed to increase keyboarding speed and accuracy through the use of individualized evaluation. The course helps bridge the speed gap between each level of keyboarding instruction. It is designed for the person who has been away from keyboarding for an extended period of time and wishes to regain keyboarding speed and accuracy. This course may be repeated two times. (11/06)

AOM-52B KEYBOARDING SPEED AND ACCURACY
2 units: 1 hour lecture, 3 hours lab.
Advisories: Know the keyboard and be able to key at least 20 wpm with 85% accuracy; ENGL-81, ENGL-84.
This course is designed to increase keyboarding speed and accuracy through the use of individualized evaluation. The course helps bridge the speed gap between each level of keyboarding instruction. It is designed for the person who has been away from keyboarding for an extended period of time and wishes to regain keyboarding speed and accuracy. This course may be repeated two times. (11/06)

AOM-53 ADVANCED COMPUTER APPLICATIONS
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: CPSC-30.
The student will learn the advanced features of the word processor, spreadsheet, database, and presentations applications. Typically the most current version of Microsoft Office is taught, students are advised to check with the discipline faculty for software version information. A prerequisite challenge is encouraged from students who can provide evidence of competency of current introductory software skills in Word, Excel, Access, and PowerPoint. (11/09)

AOM-56 OFFICE PROCEDURES
3 units: 3 hours lecture.
Advisories: ENGL-81, ENGL-84.
Students will learn the skills, strategies, and techniques needed to perform the common office procedures employed in any business. (11/08)

AOM-58 WEB SITE DEVELOPMENT
1 unit: 1 hour lecture.
Advisories: Know the keyboard and be able to key at least 20 wpm with 85% accuracy; ENGL-81, ENGL-84.
This course is designed to increase keyboarding speed and accuracy through the use of individualized evaluation. The course helps bridge the speed gap between each level of keyboarding instruction. It is designed for the person who has been away from keyboarding for an extended period of time and wishes to regain keyboarding speed and accuracy. This course may be repeated two times. (11/06)
## Agriculture

### Career and Technical Education

#### DEGREES
- A.A. - General Agriculture
- A.S. - General Agriculture: Advanced

#### CERTIFICATES
- Agricultural Chemicals
- General Agriculture

#### Gainful Employment Disclosure Metrics
Gainful Employment provides students with information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

#### Program Description
The General Agriculture major is tailor made for students wishing to explore this diverse industry with a multitude of classes offered. A broad general agricultural background provides students with entry level employment opportunities and skills along with the ability to transfer to a college or university and continue their studies in a wide variety of agricultural fields.

#### Career Opportunities
A major in General Agriculture opens many doors for students in this area such as Agricultural Education, Agricultural Banking and Finance, Self-Employment in Agriculture, Wholesale and Retail Sales, Equipment Service and Sales, Legislative/Administrative Services, Field Service Representative, and Pest Control Advisor.

#### DEGREE
**A.A. - General Agriculture (01050.AA)**

The Associate in Arts Degree is available upon satisfactory completion of the graduation requirements in addition to the General Agriculture Core and nine units from the elective list. Students must complete elective courses from three of the five agricultural areas.

### Program Student Learning Outcomes
- **A.** Given various pieces of Agricultural Equipment and the proper and safe operation instructions, students will demonstrate proper and safe use of said equipment.
- **B.** Given the required equipment and materials and a set of plans/instructions, students will demonstrate the ability to assemble a sample project by selecting the correct equipment and performing basic welding operations related to the welding field.

### Core:

<table>
<thead>
<tr>
<th>Units</th>
<th>Course Title</th>
<th>Code</th>
<th>Area</th>
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<tbody>
<tr>
<td>3</td>
<td>Agricultural Computer Applications</td>
<td>AGBS-18</td>
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<tr>
<td>3</td>
<td>Agriculture, Environment, and Society</td>
<td>AGRI-10</td>
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<tr>
<td>3</td>
<td>Elements of Animal Science</td>
<td>ANSC-10</td>
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</tr>
<tr>
<td>3</td>
<td>Elements of Landscape Horticulture</td>
<td>LAND-11</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Equipment Safety</td>
<td>MECH-31</td>
<td></td>
</tr>
</tbody>
</table>

### Plus nine units from three of the five following areas:

#### Agriculture Business
- **AGBS-10** Introduction to Agriculture Business
- **AGBS-12** Agricultural Accounting
- **AGBS-13** Agricultural Marketing
- **AGBS-17** Agricultural Sales and Communication
- **AGBS-30** Agricultural Leadership

#### Animal Science
- **ANSC-11** Elements of Animal Nutrition
- **ANSC-13** Animal Disease and Parasite Control
- **ANSC-15** Livestock Selection
- **ANSC-30** Fitting, Showing, and Merchandising Livestock

#### Crop Science/Plant Science/Soil Science
- **CROP-10** Elements of Agronomy
- **CROP-12** Vegetable Crops
- **CROP-13** Forage Crops
- **PLSC-13** Economic Entomology
- **SOIL-11** Fertilizer and Soil Amendments

#### Landscape Horticulture
- **LAND-10A** Plant Identification and Usage: Fall
- **LAND-12** Landscape Design
- **LAND-14** Landscape Construction and Installation
- **LAND-16** Plant Propagation

#### Mechanized Agriculture
- **MECH-06** Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding
- **Mech-10** Agricultural Skills
- **MECH-15** Small Engine Repair and Maintenance
- **MECH-35** Compact Power Equipment

### Suggested agriculture courses to meet General Education Breadth Requirements:
- **AGBS-11** (Area D) Agricultural Economics
- **PLSC-10** (Area B2) Elements of Plant Science
- **SOIL-10** (Area B1) Soil Science

*Transfer students should consult with their counselor regarding General Education Breadth Requirements.*
The Associate in Science Degree is available upon satisfactory completion of the graduation requirements in addition to the General Agriculture Core and 18 units from the elective list. Students must complete elective courses from three of the five agricultural areas.

Program Student Learning Outcomes
A. Given various pieces of Agricultural Equipment and the proper and safe operation instructions, students will demonstrate proper and safe use of said equipment.
B. Given the required equipment and materials and a set of plans/instructions, students will demonstrate the ability to assemble a sample project by selecting the correct equipment and performing basic welding operations related to the welding field.
C. Given the proper criteria for selection and application students will identify and select the most appropriate plants and trees with their decision based on the environment conditions, plant characteristics and customer preferences.
D. Given a computer with the proper software and the parameters of a hypothetical or actual problem students will be able to demonstrate the ability to compose a word processing document, a mathematical spreadsheet, and/or an information database given the parameters of a hypothetical problem.

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<tr>
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Plus 18 units from three of the five following areas:
Agriculture Business
- AGBS-10: Introduction to Agriculture Business (3 units)
- AGBS-12: Agricultural Accounting (3 units)
- AGBS-13: Agricultural Marketing (3 units)
- AGBS-17: Agricultural Sales and Communication (3 units)
- AGBS-30: Agricultural Leadership (2 units)

Animal Science
- ANSC-11: Elements of Animal Nutrition (3 units)
- ANSC-13: Animal Disease and Parasite Control (3 units)
- ANSC-15: Livestock Selection (3 units)
- ANSC-30: Fitting, Showing, and Merchandising Livestock (1.5 units)

Crop Science/Plant Science/Soil Science
- CROP-10: Elements of Agronomy (3 units)
- CROP-12: Vegetable Crops (3 units)
- CROP-13: Forage Crops (3 units)
- PLSC-13: Economic Entomology (3 units)
- SOIL-11: Fertilizer and Soil Amendments (3 units)

Landscape Horticulture
- LAND-10A: Plant Identification and Usage: Fall (3 units)
- LAND-12: Landscape Design (3 units)
- LAND-14: Landscape Construction and Installation (3 units)
- LAND-16: Plant Propagation (3 units)

Mechanized Agriculture
- MECH-06: Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding (3 units)
- MECH-10: Agricultural Skills (3 units)
- MECH-15: Small Engine Repair and Maintenance (3 units)
- MECH-35: Compact Power Equipment (3 units)

Suggested agriculture courses to meet General Education Breadth Requirements:
- AGBS -11*: Agricultural Economics (3 units)
- PLSC-10*: Elements of Plant Science (3 units)
- SOIL-10*: Soil Science (3 units)

*Transfer students should consult with their counselor regarding General Education Breadth Requirements.
CERTIFICATE
General Agriculture (01050.CT)

A Certificate of Achievement will be awarded upon satisfactory completion of the 13-unit core plus 24 units from the elective list. Students must complete elective courses from all five agricultural areas.

Program Student Learning Outcomes
A. Given various pieces of Agricultural Equipment and the proper and safe operation instructions, students will demonstrate proper and safe use of said equipment.
B. Given the proper criteria for selection and application students will identify and select the most appropriate plants and trees with their decision based on the environment conditions, plant characteristics and customer preferences.
C. Given the required equipment and materials and a set of plans/instructions, students will demonstrate the ability to assemble a sample project by selecting the correct equipment and performing basic welding operations related to the welding field.
D. Given a computer with the proper software and the parameters of a hypothetical or actual problem students will be able to demonstrate the ability to compose a word processing document, a mathematical spreadsheet, and/or an information database given the parameters of a hypothetical problem.

Core: Units
AGBS-18 Agricultural Computer Applications ............... 3
AGRI-10 Agriculture, Environment, and Society .......... 3
ANSC-10 Elements of Animal Science ....................... 3
LAND-11 Elements of Landscape Horticulture .......... 3
MECH-31 Equipment Safety ...................................... 1

Plus 24 units from the following areas:

Agriculture Business
AGBS -10 Introduction to Agriculture Business .......... 3
AGBS -12 Agricultural Accounting ......................... 3
AGBS-13 Agricultural Marketing ............................ 3
AGBS-17 Agricultural Sales and Communication .......... 3
AGBS-30 Agricultural Leadership ........................... 2

Animal Science
ANSC-11 Elements of Animal Nutrition ..................... 3
ANSC-13 Animal Disease and Parasite Control .......... 3
ANSC-15 Livestock Selection ................................... 3
ANSC-30 Fitting, Showing, and Merchandising Livestock .1.5

Crop Science/Plant Science/Soil Science
CROP-10 Elements of Agronomy ................................ 3
CROP-12 Vegetable Crops ..................................... 3
CROP-13 Forage Crops ....................................... 3
PLSC-13 Economic Entomology ............................... 3
SOIL-11 Fertilizer and Soil Amendments .................... 3

Landscape Horticulture
LAND-10A Plant Identification and Usage: Fall .......... 3
LAND-12 Landscape Design ...................................... 3
LAND-14 Landscape Construction and Installation ..... 3
LAND-16 Plant Propagation .................................... 3

Mechanized Agriculture
MECH-06 Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding ................................. 3
MECH-10 Agricultural Skills .................................... 3
MECH-15 Small Engine Repair and Maintenance ........ 3
MECH-35 Compact Power Equipment ....................... 3

CERTIFICATE
Agricultural Chemicals (01052.CL)

A Certificate of Achievement in Agricultural Chemicals will be awarded upon satisfactory completion of the 18-unit core courses listed below.

Program Student Learning Outcomes
A. Given various pieces of agricultural Equipment and the proper and safe operation instructions, students will demonstrate proper and safe use of said equipment.
B. Given the proper criteria for selection and application students will identify and select the most appropriate plants and trees with their decision based on the environment conditions, plant characteristics and customer preferences.
C. Given the required equipment and materials and a set of plans/instructions, students will demonstrate the ability to assemble a sample project by selecting the correct equipment and performing basic welding operations related to the welding field.
D. Given a computer with the proper software and the parameters of a hypothetical or actual problem students will be able to demonstrate the ability to compose a word processing document, a mathematical spreadsheet, and/or an information database given the parameters of a hypothetical problem.

AGBS-18 Agricultural Computer Applications ............... 3
PLSC-10 Elements of Plant Science ........................... 3
PLSC-12 Weeds ................................................. 3
PLSC-13 Economic Entomology ............................... 3
SOIL-10 Soil Science ........................................ 3
SOIL-11 Fertilizers and Soil Amendments .................... 3

AGRICulture (AGRI)

AGRI-10 AGRICULTURE, ENVIRONMENT, AND SOCIETY
(CSU breadth area D7)
3 units: 3 hours lecture.
Advisories: AGBS-18; ENGL-85, ENGL-81; LRNR-30.

This course involves an international view of the sociology of agriculture presented through an examination of relationships between societies and their environments, economics, and agriculture. Emphasis will be placed on the analysis of agriculture's use of technology and the corresponding impact on the environment, economy, and society on a global scale. (10/04)
Agriculture Business
Career and Technical Education

DEGREES
A.A. - Agriculture Business
A.S. - Agriculture Business

CERTIFICATE
Agriculture Business

Gainful Employment Disclosure Metrics

Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Agriculture Business Program at Merced College is designed to meet the need for trained personnel in a broad range of occupational opportunities involved with or related to the Agriculture Industry.

Career Opportunities
Agricultural Business graduates are in demand today and will continue to be. There is an expansion in the career opportunities in the business phases of farm related enterprises. These career opportunities are expanding fast in California, the highest farm income state in the nation. A sample of positions available to the graduate include Farm Machine Sales, Cooperative Management, Farm Management, Agricultural Banking, Food Merchandising, Land Appraisal, Marketing Economist, Livestock Buyer, Ranch Marketing Specialist, and Agricultural Insurance.

DEGREE (12/04)
A.A. - Agriculture Business (01000.AA)

The Associate in Arts Degree is available upon satisfactory completion of the graduation requirements in addition to the Agriculture Business core and 3 units from the elective list.

Program Student Learning Outcomes
A. Given a computer with the proper software and the parameters of a hypothetical or actual problem, students will be able to demonstrate the ability to compose a word processing document, a mathematical spreadsheet, and/or an information database given the parameters of a hypothetical problem.
B. Given a new or improved agricultural product, supply, or service, students will develop a written and oral marketing plan that will include an analysis of the market, a business proposition, the projected budget, and a detailed action plan.
C. Given a scenario involving proposed agricultural legislation or policies, students will analyze the affect of this legislation or policy on the local, state, and national economy and write a position paper justifying their decision to vote “yes” or “no”.

Core:

<table>
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<tr>
<th>Course</th>
<th>Units</th>
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<tr>
<td>AGBS-10</td>
<td>Introduction to Agriculture Business</td>
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<tr>
<td>AGBS-11</td>
<td>Agricultural Economics</td>
</tr>
<tr>
<td>AGBS-12</td>
<td>Agricultural Accounting</td>
</tr>
<tr>
<td>AGBS-13</td>
<td>Agricultural Marketing</td>
</tr>
<tr>
<td>AGBS-17</td>
<td>Agricultural Sales and Communication</td>
</tr>
<tr>
<td>AGBS-18</td>
<td>Agricultural Computer Applications</td>
</tr>
<tr>
<td>MECH-31</td>
<td>Equipment Safety</td>
</tr>
</tbody>
</table>

Plus 3 units from these electives:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>AGBS-14</td>
<td>Farm Management</td>
</tr>
<tr>
<td>AGBS-30*</td>
<td>Agricultural Leadership</td>
</tr>
<tr>
<td>AGBS-31*</td>
<td>Agricultural Ambassadors</td>
</tr>
<tr>
<td>AGBS-48</td>
<td>Agriculture Business: Problems</td>
</tr>
<tr>
<td>AGBS-70A-ZZ</td>
<td>Special Topics in Agriculture Business</td>
</tr>
<tr>
<td>ANSC</td>
<td>Animal Science Electives</td>
</tr>
<tr>
<td>PLSC</td>
<td>Plant Science Electives</td>
</tr>
<tr>
<td>MECH</td>
<td>Mechanized Ag Electives</td>
</tr>
</tbody>
</table>

*AGBS-30 and AGBS-31 are both repeatable three times.
**Includes Animal Science and Dairy Husbandry courses.
***Includes Plant Science, Crop Production, Soil Science, Landscape Horticulture, and Fruit Production courses.

Suggested agriculture courses to meet General Education Breadth Requirements: AGBS-11 (Area D); ANSC-10 or PLSC-10 (area B2); and SOIL-10 (area B1).
DEGREE (11/09)

A.S. - Agriculture Business: Advanced (01030.AS)

The Associate in Science Degree in Agriculture Business is available upon satisfactory completion of the graduation requirements in addition to the Agriculture Business core and 12 units from the elective list.

Program Student Learning Outcomes

A. Given a computer with the proper software and the parameters of a hypothetical or actual problem, students will be able to demonstrate the ability to compose a word processing document, a mathematical spreadsheet, and/or an information database given the parameters of a hypothetical problem.
B. Given a new or improved agricultural product, supply, or service, students will develop a written and oral marketing plan that will include an analysis of the market, a business proposition, the projected budget, and a detailed action plan.
C. Given a scenario involving proposed agricultural legislation or policies, students will analyze the affect of this legislation or policy on the local, state, and national economy and write a position paper justifying their decision to vote “yes” or “no”.

Core:

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<td>AGBS-10</td>
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<tr>
<td>AGBS-11</td>
<td>Agricultural Economics</td>
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<td>AGBS-12</td>
<td>Agricultural Accounting</td>
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<td>AGBS-15</td>
<td>Agricultural Marketing</td>
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<tr>
<td>AGBS-17</td>
<td>Agricultural Sales &amp; Communication</td>
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Plus 12 units from these electives:

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<tr>
<td>AGBS-14</td>
<td>Farm Management</td>
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<td>AGBS-30*</td>
<td>Agricultural Leadership</td>
<td>2</td>
</tr>
<tr>
<td>AGBS-31*</td>
<td>Agricultural Ambassadors</td>
<td>2</td>
</tr>
<tr>
<td>AGBS-48</td>
<td>Agriculture Business: Problems</td>
<td>2</td>
</tr>
<tr>
<td>AGBS-70A-ZZ</td>
<td>Special Topics in Agriculture Business</td>
<td>½ - 4</td>
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<tr>
<td>ANSC</td>
<td>Animal Science Electives</td>
<td>1 - 4</td>
</tr>
<tr>
<td>PLSC-10</td>
<td>Plant Science Electives</td>
<td>1 - 4</td>
</tr>
<tr>
<td>MECH-31</td>
<td>Mechanized Ag Electives</td>
<td>1 - 4</td>
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Suggested agriculture courses to meet General Education Breadth Requirement: Units

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<tr>
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<tbody>
<tr>
<td>AGBS-11</td>
<td>Agricultural Economics</td>
<td>3</td>
</tr>
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<td>ANSC 10</td>
<td>Elements of Animal Science</td>
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or

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<tr>
<td>PLSC-10</td>
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<tr>
<td>SOIL-10</td>
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</table>

Recommended Sequence: A.A. - Agriculture Business (01000.AA); A.S. - Agriculture Business: Advanced (01030.AS)

CERTIFICATE

Agriculture Business (01000.CT)

A Certificate of Achievement will be awarded upon satisfactory completion of the 19 unit core, plus 15 units from the electives below (at least five elective units must be AGBS courses).

Program Student Learning Outcomes

A. Given a computer with the proper software and the parameters of a hypothetical or actual problem, students will be able to demonstrate the ability to compose a word processing document, a mathematical spreadsheet, and/or an information database given the parameters of a hypothetical problem.
B. Given a new or improved agricultural product, supply, or service, students will develop a written and oral marketing plan that will include an analysis of the market, a business proposition, the projected budget, and a detailed action plan.
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Plus 15 units from these electives:

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<tr>
<td>AGBS-14</td>
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</table>

*AGBS-30 and AGBS-31 are both repeatable three times.

**Includes Animal Science and Dairy Husbandry courses.

***Includes Plant Science, Crop Production, Soil Science, Landscape Horticulture, and Fruit Production courses.

Recommended Sequence: A.A. - Agriculture Business (01000.AA); A.S. - Agriculture Business: Advanced (01030.AS)

Fall 1

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Spring 1

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Fall 2

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Spring 2

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**AGRICULTURE BUSINESS (AGBS)**

**AGBS-10 INTRODUCTION TO AGRICULTURE BUSINESS**

3 units: 3 hours lecture.
Advisories: ENGL-85; MATH-81 or MATH-B.
This course is a survey of the broad scope of agriculture business. It serves as an introduction to economic, accounting, management, sales, leadership, and marketing aspects of agriculture and their impact on producers and consumers. The management principles encountered in the day-to-day operation of an agricultural enterprise are stressed as they relate to the decision-making process. (12/06)

**AGBS-11 AGRICULTURAL ECONOMICS**

(CSU breadth area D2) (IGETC area 4B)
3 units: 3 hours lecture.
Advisories: ENGL-85; MATH-81.
This course serves as an introduction to the economic aspects of agriculture and the implications to local, state, national, and global markets. Students will learn the role of agricultural resources (land, labor, capital, and entrepreneurship), major agricultural resource issues and their policy remedies, and economic factors that affect prices, supply, demand, and allocation of farm commodities. This class will explore the contemporary and historical place of agriculture and farmers in our economic, social, and political systems and their relationship to the consuming public. (10/04)

**AGBS-12 AGRICULTURAL ACCOUNTING**

3 units: 3 hours lecture.
Advisories: ENGL-85; MATH-81 or MATH-B.
This course will focus on the principles of agricultural accounting systems, type of records, their use, and how to compute and use measures of earnings and costs of production to improve agribusiness efficiency. Farm income tax, social security, and employee payroll records will also be covered. (12/06)

**AGBS-13 AGRICULTURAL MARKETING**

3 units: 3 hours lecture.
Advisories: ENGL-85; MATH-81 or MATH-B.
This course surveys the nine functions of marketing within the context of the agricultural industry. These functions include: buying, selling, storage, transportation, processing, risk management, market information, grading, and financing. Also included is an overview of the structure and institutional aspects of the marketing system including global agricultural markets. (12/06)

**AGBS-14 FARM MANAGEMENT**

3 units: 3 hours lecture.
Advisories: ENGL-85; MATH-81 or MATH-B.
This course will focus on the organization and operation of farm or ranch businesses. Students will assess factors affecting profitability and evaluate opportunities for increased efficiency and profit. Students will apply budgeting principles to the school farm laboratory and perform and independent analysis of a farm. (12/06)

**AGBS-17 AGRICULTURAL SALES AND COMMUNICATION**

3 units: 3 hours lecture.
Advisories: ENGL-85.
This course involves the study of principles and practices of the selling process: selling strategies and approaches, why and how people buy, prospecting, territory management, and customer service. Self-management, communication, and interpersonal skills necessary in developing managerial abilities, leadership qualities, and facilitating teamwork within the agribusiness sector will be explored. Students will gain experience through role play, formal sales presentations, and job shadowing. (12/06)

**AGBS-18 AGRICULTURAL COMPUTER APPLICATIONS**

(CILC areas A,B,C,D,E,F,G)
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-81 or MATH-B.
This course explores computer use in the workplace with emphasis on agribusiness situations. Computer applications including word-processing, spreadsheets, databases, and presentation managers will be covered. Also included will be accessing information through the Internet and World Wide Web, telecommunications, an introduction to web page design, and other software appropriate to agribusiness. (01/07)

**AGBS-30 AGRICULTURAL LEADERSHIP**

2 units: 2 hours lecture.
Advisories: ENGL-81, ENGL-84.
This course presents leadership theory as well as self-management, communication and interpersonal skills necessary in developing managerial abilities and leadership qualities, while facilitating teamwork within the agricultural industry. Included are group dynamics and human interactions associated with private, governmental, and non-profit agricultural enterprises. Practical experience will be gained through participation in a number of parliamentary, facilitative, and administrative activities with varying degrees of diversity between semesters. This course may be repeated three times. (12/00)

**AGBS-31 AGRICULTURAL AMBASSADORS**

1.5 units: 1 hour lecture, 1.5 hours lab.
Advisories: ENGL-81, ENGL-84.
The purpose of this course is to train effective and efficient Agricultural Ambassadors. This highly specialized team of students will encourage higher education, agricultural awareness, and educational opportunities within Merced College’s Agriculture Division. Students will develop confidence and speaking ability, prepare recruitment and teaching materials, and establish an on-call public relations system for prospective future students and members of the community. This course may be repeated three times. (2/02)

**AGBS-48 AGRICULTURE BUSINESS: PROBLEMS**

2 units: 6 hours lab.
Advisories: ENGL-85; MATH-81 or MATH-B.
This course is designed for students interested in problems within the field of Agricultural Business. The problem areas will include, but not be limited to, management, marketing, accounting, commodities, market, agriculture economics, taxation, and computer use. (01/07)

**AGBS-70 A-Z SPECIAL TOPICS IN AGRICULTURE BUSINESS**

0.5 - 4 units: 0.5-4 hours lecture, 0-12 hours lab.
Advisories: ENGL-85; MATH-81 or MATH-B.
This course is the study of basic principles, processes, and theories of the special topic being presented during the semester. (12/06)
Medical Terminology (ALLH-67) is a prerequisite to the Vocational Nursing and Diagnostic Radiologic Technology Programs. This course is offered during the spring and fall semesters for 18 weeks and summer session for 6 weeks.

Reference the current Schedule of Classes for course offerings.

For full information and description of programs that require ALLH courses, see:

Nursing, Assistant

**ALLIED HEALTH (ALLH)**

**ALLH-60 NURSE ASSISTANT**

5.5 units: 3 hours lecture, 7.5 hours lab.

Limitation on enrollment: Orientation workshop; CPR card - Module A/C; negative TB screening test within past 6 months or negative chest x-ray within past year; DOJ fingerprint clearance; Penal Code Violations clearance. Advisories: ENGL-80, ENGL-84.

The course provides clinical instruction and practice of basic nursing skills required of nursing assistants employed in skilled nursing facilities and extended care facilities. The course emphasizes care of the older adult client, assistance with the activities of daily living, bathing, dressing, exercise movement, eating, eliminating safety measures, cardiopulmonary resuscitation and rehabilitation techniques. Meets State Department of Health Services requirements for eligibility to take the Nursing Assistant Certification examination.(10/06)

**ALLH-67 MEDICAL TERMINOLOGY**

3 units: 3 hours lecture.

Advisory: ENGL-85.

This course is a study of general medical terminology -- diagnostic, operative, and symptomatic terms related to body systems -- with emphasis on proper spelling and pronunciation. (10/03)
# American Sign Language

**Social Sciences, Humanities, and Fine Arts**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Lecture Hours</th>
<th>Prerequisite/Advisory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASLG-01</td>
<td>BEGINNING AMERICAN SIGN LANGUAGE</td>
<td>3</td>
<td>3</td>
<td>None</td>
<td>This course is an introduction to understanding and signing American Sign Language and appreciating the basic elements of the deaf culture. Emphasis is on obtaining a practical command of the language, including major grammatical components, basic ASL sentence structures, non-manual gestures, expression of spatial relationships in a visual-gestural language, and beginning conversational skills. (9/07)</td>
</tr>
<tr>
<td>ASLG-02</td>
<td>INTERMEDIATE AMERICAN SIGN LANGUAGE</td>
<td>3</td>
<td>3</td>
<td>ASLG-01</td>
<td>This course provides intermediate practice understanding and signing American Sign Language and appreciating the basic elements of the deaf culture. Emphasis is on obtaining a practical command of the language including major grammatical components, basic ASL sentence structures, non-manual gestures, expression of spatial relationships in a visual-gestural language, and intermediate conversational skills. (9/07)</td>
</tr>
<tr>
<td>ASLG-03</td>
<td>ADVANCED AMERICAN SIGN LANGUAGE</td>
<td>3</td>
<td>3</td>
<td>ASLG-02</td>
<td>This course provides advanced practice in understanding and signing American Sign Language and appreciating the basic elements of the deaf culture. Emphasis is on obtaining a practical command of the language, including major grammatical components, basic ASL sentence structures, non-manual gestures, expression of spatial relationships in a visual-gestural language, and advanced conversational skills. (9/07)</td>
</tr>
</tbody>
</table>

**Dean**

John Albano  
(209) 384-6314  
**Counseling**

**Cooperative Work Experience**

(209) 384-6364  
**Area Office**

IAC Social Sciences Bldg, 2nd floor
Animal Science
Career and Technical Education

DEGREES
A.A. - Animal Science
A.S. - Animal Science: Advanced

CERTIFICATE
Animal Science

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Animal Science curriculum at Merced College is designed to meet the need for trained personnel in a broad range of occupational opportunities involved with or related to the Animal Science field.

Career Opportunities
Two out of ten Animal Science graduates are involved with the production end of Animal Science. They work as self-employed farmers or ranchers in a livestock environment. The remaining eight graduates find positions in Animal-related occupations such as meat and animal processing and marketing, livestock sales, U.S. Department of Agriculture, and banking and corporate holdings in Agriculture Management. The Animal Science graduate can expect to find employment in the areas of Animal Production, Ranch Manager, Feed Processing, Equipment Sales & Service, Veterinarian, Health Products Sales & Service, Marketing, and Teaching.

DEGREE 12/11
A.A. - Animal Science (01100.AA)

An Associate in Arts Degree in Animal Science is available upon satisfactory completion of the graduation requirements and completing the 22-unit core.

Program Student Learning Outcomes
A. Demonstrate necessary skills in genetics, reproduction, nutrition, and housing in order to operate efficient and profitable livestock operations.
B. Identify proper production practices, good animal health, proper animal nutrition, and good reproduction and management practices.
C. Demonstrate the ability to perform calculations needed in the field, use good communication skills, and apply good computer skills in the animal industry.
D. Demonstrate the ability to learn and develop skills to deal with potential changes and diversity in animal science and other related industries.
E. Recognize ethical practices and diversity within the livestock industry.

Core:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>AGBS-18</td>
<td>3</td>
</tr>
<tr>
<td>ANSC-10</td>
<td>3</td>
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<tr>
<td>ANSC-11</td>
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<tr>
<td>ANSC-12</td>
<td>3</td>
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<tr>
<td>ANSC-13</td>
<td>3</td>
</tr>
<tr>
<td>CROP-13</td>
<td>3</td>
</tr>
<tr>
<td>MECH-31</td>
<td>1</td>
</tr>
</tbody>
</table>

Plus one animal production course from the following list:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSC-16</td>
<td>3</td>
</tr>
<tr>
<td>ANSC-17</td>
<td>3</td>
</tr>
<tr>
<td>ANSC-18</td>
<td>3</td>
</tr>
<tr>
<td>ANSC-19</td>
<td>3</td>
</tr>
<tr>
<td>DAIR-10</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Units: 22
DEGREE (12/11)
A.S. - Animal Science: Advanced (01110.AS)

An Associate in Science Degree in Animal Science is available upon satisfactory completion of the graduation requirements, completion of the core courses, plus eight units from the electives list.

Program Student Learning Outcomes

A. Given various feed samples to identify and categorize, student will be able to identify each sample by name, formulate a ration, and analyze which categories they fit.
B. Given a group of replacement females and their production records, students will be able to judge and assess which females should be kept for replacements in the herd.
C. Given a group of cows and the proper equipment, student will be able to demonstrate proper techniques used to artificially inseminate a cow.

Core:................................................................. Units
AGBS-18  Agricultural Computer Applications ................... 3
ANSC-10  Elements of Animal Science............................ 3
ANSC-11  Elements of Animal Nutrition........................... 3
ANSC-12  Livestock Breeding and Selection...................... 3
ANSC-13  Animal Disease and Parasite Control................ 3
CROP-13  Forage Crops ............................................ 3
MECH-31  Equipment Safety ........................................ 1

Plus 8 units from these electives:

ANSC-18  Sheep Production.......................................... 3
ANSC-19  Swine Production........................................... 3
DAIR-10  Elements of Dairy.......................................... 3

ANSC-16  Horse Husbandry........................................... 3

Plus one animal production course from the following list:

ANSC-19  Swine Production........................................... 3
ANSC-17  Beef Production............................................. 3
ANSC-16  Horse Husbandry........................................... 3
DAIR-10  Elements of Dairy.......................................... 3

AGBS-18  Agricultural Computer Applications ................... 3
ANSC-10  Elements of Animal Science............................ 3
ANSC-12  Livestock Breeding and Selection...................... 3
ANSC-13  Animal Disease and Parasite Control................ 3
ANSC-16  Horse Husbandry........................................... 3

ANSC-70  Special Topics in Animal Science...................... 1-3
DAIR-10  Elements of Dairy.......................................... 3
DAIR-11  Dairy Cattle Selection.................................... 2
MECH-06  Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding................................. 3
MECH-12  Agriculture Equipment................................... 3

Recommended Sequence: A.A. - Animal Science (01100.AA) &
A.S. - Animal Science: Advanced (01110.AS)

CERTIFICATE (12/11)
Animal Science (01100.CT)

A Certificate of Achievement will be awarded upon satisfactory completion of the 22-unit core and 14 units from the electives list.

Program Student Learning Outcomes

A. Demonstrate necessary skills in genetics, reproduction, nutrition, and housing in order to operate efficient and profitable livestock operations.
B. Identify proper production practices, good animal health, proper animal nutrition, and good reproduction and management practices.
C. Demonstrate the ability to perform calculations needed in the field, use good communication skills, and apply good computer skills in the animal industry.
D. Demonstrate the ability to learn and develop skills to deal with potential changes and diversity in animal science and other related industries.
E. Recognize ethical practices and diversity within the livestock industry.

Core:................................................................. Units
AGBS-18  Agricultural Computer Applications ................... 3
ANSC-10  Elements of Animal Science............................ 3
ANSC-11  Elements of Animal Nutrition........................... 3
ANSC-12  Livestock Breeding and Selection...................... 3
ANSC-13  Animal Disease and Parasite Control................ 3
ANSC-16  Horse Husbandry........................................... 3
ANSC-17  Beef Production............................................. 3
ANSC-19  Swine Production........................................... 3
DAIR-10  Elements of Dairy.......................................... 3

Plus 14 units from these electives:

AGBS-18  Agricultural Computer Applications ................... 3
ANSC-12  Livestock Breeding and Selection...................... 3
ANSC-17  Beef Production............................................. 3
ANSC-19  Swine Production........................................... 3
ANSC-16  Horse Husbandry........................................... 3
ANSC-17  Beef Production............................................. 3
ANSC-18  Sheep Production........................................... 3
ANSC-19  Swine Production........................................... 3

ANSC-22  Applied Livestock Practices............................ 3
ANSC-30  Fitting, Showing, and Merchandising Livestock..... 1.5
ANSC-70  Special Topics in Animal Science...................... 1-3
DAIR-10  Elements of Dairy.......................................... 3
DAIR-11  Dairy Cattle Selection.................................... 2
MECH-06  Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding................................. 3
MECH-12  Agriculture Equipment................................... 3

Recommended Sequence: Fall

AGBS-18  Agricultural Computer Applications ................... 3
ANSC-10  Elements of Animal Science............................ 3
ANSC-30  Fitting, Showing, and Merchandising Livestock..... 1.5

Recommended Sequence: Spring

ANSC-11  Elements of Animal Nutrition........................... 3
ANSC-30  Fitting, Showing, and Merchandising Livestock..... 1.5

• Animal Science •  71
ANIMAL SCIENCE (ANSC)

ANSC-10 ELEMENTS OF ANIMAL SCIENCE
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is a survey of the livestock industry, supply of animal products, and their uses in animal production. There is a special emphasis on the origin, characteristics, adaptation, and contributions of farm animals to the agriculture industry. The student will analyze the economic trends and career opportunities in animal agriculture. Field trips will be required. (12/06)

ANSC-11 ELEMENTS OF ANIMAL NUTRITION
3 units: 3 hours lecture.
Advisories: ENGL-85; MATH-80.
The science of animal nutrition is the basis for “Livestock Feeding and Nutrition.” The fundamentals of digestion and absorption in both ruminants and non-ruminants are discussed in this course. The nutritive value of feeds as they relate to the formulation of livestock rations will be emphasized, including by-product feeding. (12/06)

ANSC-12 LIVESTOCK BREEDING AND SELECTION
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course combines the study of basic genetic principles with the study of the anatomical and physiological aspects of reproduction as they relate to animal species significant to agriculture. The genetic principles to be emphasized include basic inheritance, selection techniques, mating systems, heterosis, and performance evaluation. The reproductive aspects to include endocrinology, estrous cycles, mating behaviors, gametogenesis, conception, gestation, parturition, and maternal behaviors. Artificial insemination, embryo manipulation, and current innovations in reproductive biotechnology will also be examined. (12/06)

ANSC-13 ANIMAL DISEASE AND PARASITE CONTROL
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course of animal health and sanitation will provide instruction to the student on common livestock diseases and fundamentals of immunity. It will also include coverage of the livestock worker’s role in promoting animal health and the foundation of disease control programs. (12/06)

ANSC-15 LIVESTOCK SELECTION
2 units: 1 hour lecture, 3 hours lab.
Advisory: ENGL-85.
This is a detailed analysis of various visual and physical methods of appraising beef, sheep, swine, and horses concerning functional and economic value. Written and oral summaries of evaluation will be learned in the class. Specific reference will be made to performance data and factors determining carcass value. The course may be repeated three times for advanced skill and training. (01/07)

ANSC-16 HORSE HUSBANDRY
3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This is a survey of the equine industry encompassing the evolution and role of the equine species throughout history, breed selection and development, nutrition, diseases, preventive health, reproductive management, basic horsemanship, and stable alternatives. (12/06)

ANSC-17 BEEF PRODUCTION
3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This is a study of principles and practices of purebred and commercial beef cattle production throughout the world, United States, and California. There will be emphasis placed on the importance of breeds, breeding principles, selection, nutrition, environmental management, health, marketing, and record keeping to ensure scientifically-based management decisions and consumer product acceptance as applied to beef cattle. (12/06)

ANSC-18 SHEEP PRODUCTION
3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This course is a survey of the sheep industry, including management of commercial, purebred, and small farm flocks; selecting, feeding, breeding, and basic care of ewes and lambs, plus the marketing of lambs and wool. (12/06)

ANSC-19 SWINE PRODUCTION
3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This is a study of the principles and practices of purebred and commercial pork production throughout California and the United States, and the world. Emphasis will be placed on the importance of breeds, breeding principles, selection, nutrition, environmental management, health, marketing, and record keeping to ensure scientifically-based management decisions and consumer product acceptance. (12/06)
ANSC-22 APPLIED LIVESTOCK PRACTICES
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84.  
This class will provide the selection and completion of an animal project under faculty supervision. The class involves participation in the actual purchase, raising, care and handling, managing, and merchandising of one or a group of project animals. The actual ownership of the livestock is not required as college animals will be used. This course may be repeated once. (3/00)

ANSC-30 FITTING, SHOWING, AND MERCHANDISING LIVESTOCK
1.5 units: 1 hours lecture, 1.5 hours lab.  
Advisory: ENGL-85.  
This course is designed for people to develop skills in preparing and marketing beef cattle, sheep, swine, dairy cattle, and horses for competition at fairs and shows. Lessons in exhibiting the animals are given. The course may be repeated three times for advanced skill and training. (1/06)

ANSC-40 BEGINNING HORSEMANSHIP (WESTERN)
2 units: 1 hour lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84.  (Note: Check with instructor for supplies needed.)  
This is a course that deals with the handling and schooling of a horse from the ground, in addition to basic fundamentals of riding. Safety factors for both horse and rider will be emphasized. Other areas of the course will include the proper use of equipment and aids. (11/06)

ANSC-41 INTERMEDIATE HORSEMANSHIP (WESTERN)
2 units: 1 hour lecture, 3 hours lab.  
Prerequisite: ANSC-40.  Advisories: ENGL-81, ENGL-84.  (Note: Check with instructor for supplies needed.)  
This is a class in intermediate western riding which will enable a person to school a horse, teach beginning riding, or train another rider in schooling. The student will obtain a working knowledge of the judging of horse shows and obligations involved in the judging of different events. A rider in this class is expected to be able to give a creditable performance in a standard AHSA or AQHA horse show. (11/06)

ANSC-46A SPECIALIZED HORSE TRAINING
4 units: 2 hours lecture, 6 hours lab.  
One-way corequisite: ANSC-40.  Advisories: ENGL-81, ENGL-84.  (Note: Check with instructor for supplies needed.)  
This course deals with early schooling of the young horse, in training techniques, breaking to lead, acceptance of snaffle bit, socking out procedures, and developing a good foundation of horse and trainer relationship for elementary ground work and riding. (11/06)

ANSC-46B SPECIALIZED HORSE TRAINING
4 units: 2 hours lecture, 6 hours lab.  
Prerequisite: ANSC-46A.  Advisories: ENGL-81, ENGL-84.  (Note: Check with instructor for supplies needed.)  
This course is designed for learning advanced training of the young horse including collection, turning, backing, leads, flying leads, trailer loading, rope work, and cattle work. (11/06)

ANSC-47A BACK COUNTRY ANIMAL MANAGEMENT
1 unit: 0.5 hour lecture, 1.5 hours lab.  
Prerequisite/Advisory: None.  
The care and maintenance of horses and mules in back country situations will be the emphasis of this course. Packing skills, load hitches, and load balance of pack animals will be stressed. Trail and pack animal safety will be incorporated.

ANSC-48 TACK REPAIR
1 unit: 0.5 hour lecture, 1.5 hours lab.  
Prerequisite/Advisory: None.  
This class is designed to teach the care and maintenance of tack and accessories. The skills to be learned will include stitching, braiding, splicing, riveting, and proper saddle and miscellaneous tack repair. Repairs, taking into consideration the comfort of the horse, will be stressed.

ANSC-49 ANIMAL SCIENCE: PROBLEMS
2 units: 6 hours lab.  
Advisory: ENGL-85.  
This course will involve supervised study and practices involving special problems in Animal Science. The areas covered in this course should be areas that are not covered in other Animal Science courses. Emphasis will be placed on the needs and interests of the students. (3/07)

ANSC-50 HORSESHOEING
5 units: 2 hours lecture, 9 hours lab.  
Advisories: ENGL-81, ENGL-84.  
This course is an introduction to the shoeing of horses, utilizing both hot and cold shoes. Also included will be the anatomy and physiology of the horse’s foot with the ability to identify blemishes and soundness in horses. Use of the forge and the making of shoes from bar stock will be presented in addition to the instruction of actually shoeing horses. (1/06)

ANSC-51 ADVANCED HORSESHOEING
5 units: 2 hours lecture, 9 hours lab.  
Prerequisite: ANSC-50.  Advisory: ENGL-81.  
This is an advanced course in the corrective shoeing of horses. The course is designed to prepare the farrier to handle special problems in correcting foot problems of various types of horses. Use of the forge for the construction of various types of special shoes and weights will be included along with its actual application to the shoeing of problem horses. (1/06)

ANSC-52 HOOF CARE AND TRIMMING
2 units: 1 hour lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84.  
This is a class designed to teach the student how to care for and maintain the hooves of horses. (1/06)

ANSC-70AA-ZZ SPECIAL TOPICS IN ANIMAL SCIENCE
0.5 - 4 units: 0-4 hours lecture, 0-12 hours lab.  
Advisories: ENGL-81, ENGL-84.  
This course is the study of basic principles, processes, and theories of the special topic being presented during the semester. (01/07)

DAIRY HUSBANDRY (DAIR)

DAIR-10 ELEMENTS OF DAIRY
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-85.  
This is a study of history, development, and projections of the dairy industry. General information on the economics of dairying, facts, trends, selection, culling, fitting, showing, judging, pedigrees, feeding, and basic management skills will be learned and also information on employment opportunities and requirements. (12/06)

DAIR-11 DAIRY CATTLE SELECTION
2 units: 1 hour lecture, 3 hours lab.  
Advisory: ENGL-85.  
There will be selection of dairy cattle based on type conformation and the correlation between type and production. Pedigree evaluation, animal analysis, linear classification, and body condition scoring will be learned. Written and oral evaluation on selection will be done. The course may be repeated once for advanced skill and training. (01/07)
Anthropology & Archeology
Social Sciences, Humanities, and Fine Arts

DEGREE
A.A. - Anthropology: Archaeology
A.A. - Anthropology: Cultural
A.A. - Anthropology: Physical

Program Description
The Anthropology program integrates concepts and information from the Natural Sciences, Social Sciences and Humanities to provide a holistic understanding of mankind through the fields of Biological Anthropology, Socio-cultural Anthropology and Archaeology.

This program is designed for students interested in Anthropology who intend to continue their studies at one of the California State Colleges or at the University of California; students should work with their counselors for specific requirements.

DEGREE
A.A. - Anthropology: Archaeology (22100.AA)

For an Associate in Arts Degree in Anthropology: Archaeology, students must meet the graduation requirements and the 18-unit curriculum below. It is recommended that breadth classes be chosen from the lists below whenever possible.

Program Student Learning Outcomes
A. Demonstrate the ability to use chronometric data and cadastral technology in archaeological fieldwork.
B. Evaluate the evidence for Archaeological interpretations.
C. Demonstrate an understanding of past cultural diversity.
D. Apply knowledge and skills towards solving problems in archaeological interpretation.

<table>
<thead>
<tr>
<th>Units</th>
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<tbody>
<tr>
<td>ANTH-01 Physical Anthropology .................................................. 4</td>
</tr>
<tr>
<td>ANTH-02 Cultural Anthropology .................................................... 3</td>
</tr>
<tr>
<td>ARCH-01 Introduction to Archaeology .............................................. 3</td>
</tr>
<tr>
<td>ARCH-01L Field Archaeology ......................................................... 1</td>
</tr>
</tbody>
</table>

Students must also select an additional seven units from the following lists according to the student’s area of concentration:

Archaeology Concentration
GEOG-01 Physical Geography ............................................................ 3
GEOG-01L Physical Geography Lab ..................................................... 1
GEOL-01 Physical Geology ................................................................. 4
MATH-10 Elementary Statistics .......................................................... 3
SCI-30 Science Lab Experience ......................................................... 1
SOIL-10 Soil Science ................................................................. 3

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DEGREE
A.A. - Anthropology: Cultural (22105.AA)

For an Associate in Arts Degree in Anthropology: Cultural, students must meet the graduation requirements and the 18-unit curriculum below. It is recommended that breadth classes be chosen from the lists below whenever possible.

Program Student Learning Outcomes
A. Evaluate the interpretation of anthropological evidence.
B. Demonstrate an understanding of cultural diversity.
C. Apply knowledge towards addressing problems in Socio-cultural Anthropology.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>ANTH-01 Physical Anthropology .................................................. 4</td>
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<tr>
<td>ANTH-02 Cultural Anthropology .................................................... 3</td>
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<tr>
<td>ARCH-01 Introduction to Archaeology .............................................. 3</td>
</tr>
<tr>
<td>ARCH-01L Field Archaeology ......................................................... 1</td>
</tr>
</tbody>
</table>

Students must also select an additional seven units from the following lists according to the student’s area of concentration:

Cultural Concentration
ANTH-10 Southeast Asian Culture .................................................. 3
GEOG-02 World Geography ............................................................. 3
MATH-10 Elementary Statistics ......................................................... 3
PHIL-15 Comparative Religions ....................................................... 3
SCI-30 Science Lab Experience ......................................................... 1

18
DEGREE

A.A. - Anthropology: Physical (22110.AA)

For an Associate in Arts Degree in Anthropology: Physical, students must meet the graduation requirements and the 18-unit curriculum below. It is recommended that breadth classes be chosen from the lists below whenever possible.

Program Student Learning Outcomes
A. Demonstrate the ability to use current anthropometric or other appropriate technology and interpret the resulting data.
B. Evaluate bio-anthropological evidence relating to primatology, human paleontology and physical variability.
C. Demonstrate an understanding of the cultural development of man from the Paleolithic to Neolithic periods.
D. Apply knowledge and skills towards solving problems in Forensic Anthropology.

Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Description</th>
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<tbody>
<tr>
<td>ANTH-01</td>
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<td>ANTH-02</td>
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<td>Introduction to Archaeology</td>
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<td>Field Archaeology</td>
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Students must also select an additional seven units from the following lists according to the student's area of concentration:

Physical Concentration

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<tr>
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<td>BIOL-09</td>
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<td>Introduction to Genetics</td>
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<td>BIOL-16</td>
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<td>General Human Anatomy</td>
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<td>CHEM-04A</td>
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<td>MATH-10</td>
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<td>Elementary Statistics</td>
</tr>
<tr>
<td>SCI-30</td>
<td>1</td>
<td>Science Lab Experience</td>
</tr>
</tbody>
</table>

ANTH-01 PHYSICAL ANTHROPOLOGY

(IGETC area B5)

4 units: 3 hours lecture, 3 hours lab.
Advisory: ENGL-85.

This course provides the student with an opportunity to gain practical experience in archaeological field reconnaissance, archaeological site excavation, laboratory analysis of archaeological data, and preparation of archaeological reports. Students will take part in surveys and excavations on local and historic and prehistoric sites. This course may be repeated three times. (2/08)

ANTH-01L FIELD ARCHAEOLOGY

1 unit: 3 hours lab.
Advisory: ENGL-85.

This course focuses on the contrasting roles of women in traditional and contemporary cultures. The arts and artifacts, beliefs, and traditions of various world societies will be studied with regard to their effect on, and interaction with, women. The position of women in decision making, family structure, economics, and other social systems will be investigated. (2/08)

ANTH-30 MAN, CULTURE, AND SOCIETY

2 units: 2 hours lecture.

This course surveys the basic ideas and social constructs of Southeast Asian cultures, especially the cultures of the new Southeast Asian groups in California: Hmong, Mien, Lao, Cambodian, Vietnamese, etc. Emphasis will be placed on issues of cultural ethnicity, family lifestyle, educational background, and socio-political organization of each group in the past and in the United States. (12/06)

ANTH-32 AN ANTHROPOLOGICAL STUDY OF WOMEN

3 units: 3 hours lecture.

This course is an introduction to archaeological theory and method. The class examines the historical development of the discipline, various theoretical and methodological approaches, and technical aspects of archaeology such as stratigraphic analysis, relative and absolute dating, lithic analysis and seriation. Artifacts from around the world are used in class to illustrate various concepts of archaeology and prehistory. (2/08)

ARCHAEOLOGY (ARCH)

ARCH-01 INTRODUCTION TO ARCHAEOLOGY

(IGETC area B1) (CSU breadth area B1)
3 units: 3 hours lecture.
Advisory: ENGL-85.

This course is an introduction to anthropological perspectives to contemporary issues. The class examines the historical development of the discipline, various theoretical and methodological approaches, and technical aspects of archaeology such as stratigraphic analysis, relative and absolute dating, lithic analysis and seriation. Artifacts from around the world are used in class to illustrate various concepts of archaeology and prehistory. (1/05)

ANTH-10 SOUTHEAST ASIAN CULTURE: EMPHASIS HMONG CULTURE

(CSU breadth area D1) (IGETC area 4A)
3 units: 3 hours lecture.
Advisories: ENGL-85.

This course provides the student with an opportunity to gain practical experience in archaeological field reconnaissance, archaeological site excavation, laboratory analysis of archaeological data, and preparation of archaeological reports. Students will take part in surveys and excavations on local and historic and prehistoric sites. This course may be repeated three times. (2/08)

ARCH-31 MUSEUM TECHNOLOGY

2 units: 1 hour lecture, 3 hours lab.
Advisories: ENGL-85.

This course is an introduction to the techniques of preservation of those objects which best illustrate the phenomenon of nature and the works of man as well as the utilization of these objects in a museum setting for the increase of knowledge and the enlightenment of the people. Lecture and laboratory work on collection, preservation, and display of such materials and artifacts will be taught. (2/08)

• Anthropology & Archeology •  75
Program Description
The study of art will enrich the student’s experience of the world and encourage the student to draw upon creative resources. An education in art can lead to professional or vocational careers, as well as enhance abilities in other fields. The Art Department offers a foundation in theoretical and practical skills, and the opportunity to work in a wide variety of specific art media.

The Art Program provides lower division undergraduate transfer classes, professional preparation, personal development, general interest, and general education, as well as an Associate in Arts degree.

Career Opportunities in ART
Some careers may require more than two years of college study.

- Art Instructor
- Art Historian
- Art Critic / Writer
- Art Therapist
- Arts Administrator
- Painter / Sculptor
- Ceramist
- Printmaker
- Illustrator
- Graphic Designer
- Film and Story Board Illustrator
- Cartoonist
- Typographer
- Photographer
- Animator
- Art Gallery/Museum - Staff, Manager, Director, or Curator
- Product Design
- Jewelry Design
- Fashion Design
- Color Consultant
- Interior Design
- Furniture Design
- Textile Design
- Landscape Design
- Floral Design
- Stage Design
- Set and Lighting Designer
- Digital Media Artist
- Sign Painter
- Television
- Advertising
- Sculpture
- Fundamentals of Design in Art
- Drawing
- Figure Drawing
- Acrylic Painting
- Oil Painting
- Illustrator
- Animator
- Coordinator
- Art Historian
- Art Critic / Writer
- Art Therapist
- Arts Administrator
- Painter / Sculptor
- Ceramist
- Printmaker
- Illustrator
- Graphic Designer
- Film and Story Board Illustrator
- Cartoonist
- Typographer
- Photographer
- Animator
- Art Gallery/Museum - Staff, Manager, Director, or Curator

Program Student Learning Outcomes
A. Demonstrate a knowledge of the techniques and processes involved in a variety of two and three dimensional art forms.
B. Create works of art integrating aesthetics with the elements and principles of design theory as applied to their area of emphasis: painting, print making, sculpture, ceramics, photography, etc.
C. Identify, distinguish and assess individual styles as applied to various media.
D. Build upon their appreciation and understanding of the various multicultural and philosophical patterns of traditional and contemporary art throughout history.

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tr>
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<td>ART-15</td>
<td>Fundamentals of Design in Art</td>
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<td>ART-24A</td>
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<td>Printmaking III: Lithography</td>
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<td>Printmaking IV: Exploration</td>
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ART-41B Graphic Design II ......................................................3
ART-41C Graphic Design III .....................................................3
ART-43 Digital Media - Photoshop.........................................3
PHOT-10A Basic Photography ....................................................3
PHOT-11A Digital Camera Basics ..............................................3

*Offered in the spring semester only.
**Offered in the fall semester only.

Recommended Sequence: A.A. - Art (10110.AA)

Fall 1
Art History (Choice of ART-01, 02, 06) ........................................3
ART-15 Fundamentals of Design in Art..................................3
ART-24A Drawing I...................................................................3

Spring 1
Art History (Choice of ART-01, 02, 06)........................................3
ART-26A Figure Drawing I......................................................3

Fall 2
ART-12A Sculpture .................................................................3
ART-25A Acrylic Painting I.......................................................3
or
ART-28A Oil Painting I..............................................................3

Spring 2
ART elective ..................................................................................3

ART-01 ART HISTORY: ANCIENT THROUGH GOTHIC
(CSU breadth area C1) (IGETC area 3A)
3 units: 3 hours lecture.
Prerequisite: ENGL-85. Advisory: ENGL-01A.
This course is a survey that examines the historical contexts of humanity through the development of art, architecture, painting, sculpture, and the minor arts, from pre-history through the Gothic period. (5/10)

ART-02 ART HISTORY: RENAISSANCE THROUGH 20th CENTURY
(CSU breadth area C1) (IGETC area 3A)
3 units: 3 hours lecture.
Prerequisite: ENGL-85. Advisory: ENGL-01A.
This course is a survey that examines the historical context of humanity through the development of art, architecture, sculpture, painting and the applied arts from the Renaissance to the 20th Century. (5/10)

ART-06 ART OF THE 20TH CENTURY
(CSU breadth area C1)
3 units: 3 hours lecture.
Prerequisite: ENGL-85. Advisory: ENGL-01A.
This course is a survey of the prominent artists and art movements from Impressionism through Post-Modernism to today. Major works in painting, sculpture, architecture and the applied arts are covered. The historical context of science, invention, world events, politics, philosophy, religion, and music are examined as influences reflected in each generation's contribution to the visual arts. (4/10)

ART-12A SCULPTURE
(CSU breadth area C1)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite/Advisory: None.
This course is a survey of fundamentals of the sculpting process and a study of materials related to sculpture. Work explores projects in 3-D to bas relief and covers styles from realism to abstract. (1/05)

ART-12B INTERMEDIATE SCULPTURE
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-12A.
Students will explore sculpture materials, methods, techniques, and 3-D project problem-solving related to intermediate-level course work. (1/05)

ART-12C ADVANCED SCULPTURE
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-12B.
Students will explore sculpture materials, methods, techniques, and 3-D project problem-solving related to advanced-level course work. (1/05)

ART-15 FUNDAMENTALS OF DESIGN IN ART
(CSU breadth area C1)
3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-01A.
This is a foundation course for the study of the Visual Arts. Lectures and studio projects explore and analyze concepts and theories related to the elements and principles of design, including: line, shape, iconography, space, value, color, texture, movement, compositional substructures, unity, variety, balance, emphasis, rhythm, scale and proportion. Subject matter is applicable to professional fields in fine art (2D & 3D), graphic design, commercial art, photography, applied arts, environmental design, architecture, interior design and fashion. (2/10)

ART-17A CERAMICS - POTTERY
3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This course is a survey of ceramic materials (clays and glazes) and their function in relation to design as an art form. Basic studio practice in the hand-building processes, decorating, glazing, and firing of ware, and an introduction to the potter's wheel are included. (1/08)
ART-17B INTERMEDIATE CERAMICS - POTTERY
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-17A. Advisory: ENGL-85.
This is an intermediate course in ceramic pottery and sculpture design and construction, non-technical glaze composition, and kiln firing. Stress is placed upon the attainment of skill on the potter’s wheel and organization of construction problems. Students pursue projects of individual interest. (1/08)

ART-17C ADVANCED CERAMICS - POTTERY
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-17B. Advisory: ENGL-85.
This is an advanced course in ceramic pottery with emphasis on more complicated sculpture and wheel construction and design techniques. Students will participate in glaze composition and experience advanced decorating and glazing techniques. Students will pursue projects of individual interest related to the objectives of the course. (1/08)

ART-20A PRINTMAKING I
3 units: 2 hours lecture, 3 hours lab.
Prerequisite/Advisory: None.
This course covers the fundamental printmaking processes including relief and intaglio methods. It includes exploration of black and white as well as an introduction to color techniques. Students will produce limited editions and survey the history of printmaking. (1/05)

ART-20B PRINTMAKING II: INTAGLIO AND COLOR
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-20A.
This course deals with black and white as well as color printmaking techniques with an emphasis on intaglio processes. (1/05)

ART-20C PRINTMAKING III: LITHOGRAPHY
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-20B.
This course focuses on the lithographic printmaking techniques in which images are printed from limestone slabs. (1/05)

ART-20D PRINTMAKING IV: EXPLORATION
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-20C.
This course is an advanced study of printmaking techniques with focus on the individual student’s ideas. Students will work towards the development of the personal set of aesthetic requisites necessary for advanced study and independent work. (1/05)

ART-24A DRAWING I
(CSU Breadth Area C1)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite/Advisory: None.
This course is an introduction to the principles, theories, and techniques of drawing and composition. Students will explore foundation-level concepts while surveying materials used in drawing as an art form, as well as the history of their development. (1/05)

ART-24B DRAWING II
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-24A.
This course is an intermediate-level study of the theories and practice of drawing as an art form. Problems in perspective, proportion, and form will be addressed. A more advanced approach to concept and techniques in media are also included, as well as the history of their development. (1/05)

ART-24C DRAWING III
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-24B.
This course is an advanced-level study of drawing as an art form. More advanced problems in the aesthetics and techniques of drawing will be addressed. The approach is individualized. Contemporary as well as historical concepts will be addressed. (1/05)

ART-25A ACRYLIC PAINTING I
3 units: 2 hours lecture, 3 hours lab.
Prerequisite/Advisory: None.
This is a course in the fundamentals of acrylic painting as an art form. Students will address problems in portrayal, proportion, composition, and color. (1/05)

ART-25B ACRYLIC PAINTING II
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-25A.
This course is a study of the materials and methods of acrylic painting. Students will explore creative and conceptual solutions to problems in portrayal, composition, and color. (1/05)

ART-25C ACRYLIC PAINTING III
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-25B.
This course is an advanced study of acrylic painting techniques. Students will apply these techniques with emphasis on conceptual development and critical evaluation. (1/05)

ART-25D ACRYLIC PAINTING IV
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-25C.
This course is an exploration of acrylic painting with focus on the students’ individual ideas. Students will work towards the development of the personal set of aesthetic requisites necessary for advanced study and independent work. (1/05)

ART-26A FIGURE DRAWING I
3 units: 2 hours lecture, 3 hours lab.
Prerequisite/Advisory: None.
This is a basic course in drawing the human form and proportion. Models are used in both rapid and extended studies with a variety of drawing media. (1/05)

ART-26B FIGURE DRAWING II
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-26A.
This is an intermediate study of human form and proportion. Models are used in both rapid and extended studies with a variety of drawing and painting media. (1/05)

ART-26C FIGURE DRAWING III
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-26B.
This course is an advanced study of human form and proportions. Models are used in both rapid and extended studies with a variety of drawing and painting media. (1/05)

ART-28A OIL PAINTING I
3 units: 2 hours lecture, 3 hours lab.
Prerequisite/Advisory: None.
This is a course in the fundamentals of oil painting as an art form. Students will address problems in portrayal, proportion, composition, and color. (1/05)

ART-28B OIL PAINTING II
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-28A.
This course is a study of the materials and methods of oil painting. Students will explore creative and conceptual solutions to problems in portrayal, composition, and color. (1/05)

ART-28C OIL PAINTING III
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-28B.
This course is an advanced study of oil painting techniques. Students will apply these techniques with emphasis on conceptual development and critical evaluation. (1/05)
ART-29D OIL PAINTING IV
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-28C.
This course is an exploration of oil painting with focus on the students' individual ideas. Students will work towards the development of the personal set of aesthetic requisites necessary for advanced study and independent work. (1/08)

ART-29A WATERCOLOR PAINTING I
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-29A.
This is a course in the fundamentals of watercolor painting as an art form. Students will address problems in portrayal, proportion, composition, and color. (1/05)

ART-29B WATERCOLOR PAINTING II
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-29A.
This course is a study of the materials and methods of watercolor painting. Students will explore creative and conceptual solutions to problems in portrayal, composition, and color. (1/05)

ART-29C WATERCOLOR PAINTING III
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-29B.
This course is an advanced study of watercolor painting techniques. Students will apply these techniques with emphasis on conceptual development and critical evaluation. (1/05)

ART-29D WATERCOLOR PAINTING IV
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-29C.
This course is an exploration of watercolor painting with focus on the students' individual ideas. Students will work towards the development of the personal set of aesthetic requisites necessary for advanced study and independent work. (1/05)

ART-40A DIGITAL ART I: INTRODUCTION TO DIGITAL MEDIA
[CILC area A]
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Limited to the number of licenses available.
Prerequisite: ART-24A; ENGL-85.
This course introduces image creation and manipulation using vector software programs. Students will learn basic design principles and software technique to create, edit, and output digital images. The emphasis is on developing creative thinking, design skills, a visual esthetic sensibility, and technical ability in the medium. (1/08)

ART-41A GRAPHIC DESIGN I
[CILC area A]
3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This course provides an introduction to graphic design and the visual communication arts. It emphasizes skills in design, problem analysis, conceptual thought, layout, typography, visualization, and production workflow in creating compositions and designs to visually inform and communicate to a mass audience. (1/08)

ART-41B GRAPHIC DESIGN II
[CILC area A]
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-41A. Advisory: ENGL-85.
This course is an intermediate level in graphic design and the visual communication arts. It emphasizes the further development of skills in design including use of computer software and integrating visuals and typography. Students will spend considerable time on the production of projects on both computer and the drawing board. (1/08)

ART-41C GRAPHIC DESIGN III
[CILC area A]
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ART-41B. Advisory: ENGL-85.
This is an advanced course in graphic design and the visual communication arts. It emphasizes integrating design skill sets including computer software to create graphic design solutions across different media applications. Students will spend considerable time on the production of projects on both computer and the drawing board. (1/08)

ART-43 DIGITAL MEDIA - PHOTOSHOP
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Limited to the number of licenses available.
Prerequisites: ART-40A. Advisories: ART-15, ART-24A; ENGL-85.
This studio course continues development in creative thinking, design skills, and technical ability in the use of Photoshop software. Students will develop a personal expressive vision through extended art and design projects. Advanced techniques in Photoshop will extend student capability in producing works for print, web and multimedia outputs. (11/08)

ART-45A MULTIMEDIA I: INTRODUCTION TO WEB DESIGN AND ANIMATION
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Limited to the number of licenses available.
Advisories: AOM-50A; ART-24A; ENGL-01A.
This studio course imparts a thorough foundation in creative Adobe Flash digital media production for the web. Indispensable basic typographic, color, illustration, animation, inter-activity, layout, and sound design concepts feature strongly in the class. The course's basic flash and new HTML 5 web technology techniques prepare students for producing imaginative web sites and multimedia projects. (2/12)

ART-48 A-ZZ ADVANCED SPECIAL PROBLEMS IN ART
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Before enrolling, the student must complete a contract detailing proposed area of study. Completed contract requires signatures: a) the instructor of the course section the student will be attending; b) the Arts Division Chairperson.
This course is designed to provide students with the opportunity to do advanced, specialized work, under the supervision of an instructor in areas not offered in regular classes. Students must develop an advanced problem in the area of art that they wish to explore. (1/08)
Arts and Humanities
Social Sciences, Humanities, and Fine Arts

DEGREE
A.A. - Arts and Humanities

Program Description
The degree in Arts and Humanities offers a focus on the broad basic cultural manifestations of the arts and humanities. The area of emphasis is on the intellectual, cultural and aesthetic development of the arts and humanities rather than on the application of skills.

This area of emphasis provides an opportunity to earn an AA degree in a broad area of study and is intended for students who may need to explore possibilities before committing themselves to a career or transferring to a four-year university.

Students are strongly encouraged to consult with a counselor for specific information regarding their career planning.

DEGREE
A.A. - Arts and Humanities (49800.AA)

For an Associate in Arts Degree with an area of emphasis in Arts and Humanities, students must meet the basic graduation requirements and complete 18 units from the courses listed below.

Select nine units from each of the following two categories. Courses listed below may be counted as general education requirements as well as area of emphasis requirements.

Program Student Learning Outcomes
A. Demonstrate a knowledge of the techniques and processes involved in a variety of photographic media.
B. Demonstrate a knowledge of aesthetics and design principles in a variety of photographic media.
C. Recognize and trace relationships between various culture an periods in the art historical time-line and demonstrate their grasp of the underlying philosophies exhibited in the art produced.

Category 1: Arts

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<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
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<td>Art History: Ancient through Gothic</td>
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</tr>
<tr>
<td>ART-02</td>
<td>Art History: Renaissance through 20th Century</td>
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<td>Drawing I</td>
<td>3</td>
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<tr>
<td>DRAM-01</td>
<td>Introduction to Theater</td>
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<tr>
<td>DRAM-03</td>
<td>History of Dramatic Literature</td>
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<tr>
<td>MUS-01</td>
<td>Fundamentals of Music</td>
<td>3</td>
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<tr>
<td>MUS-11</td>
<td>History of Classical Music (Early Music through Baroque Era)</td>
<td>3</td>
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<tr>
<td>MUS-12</td>
<td>History of Classical Music (Classical Era to the Present Day)</td>
<td>3</td>
</tr>
<tr>
<td>MUS-13</td>
<td>History and Appreciation of Jazz</td>
<td>3</td>
</tr>
<tr>
<td>MUS-14</td>
<td>History of American Popular Music</td>
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Category 2: Humanities

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>HUM-01</td>
<td>Studies in Humanities – Ancient Through Renaissance</td>
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<tr>
<td>HUM-01H</td>
<td>Honors Studies in Humanities - Ancient Through Renaissance</td>
<td>3</td>
</tr>
<tr>
<td>HUM-02</td>
<td>Studies in Humanities – Renaissance to Present</td>
<td>3</td>
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<tr>
<td>HUM-02H</td>
<td>Honors Studies in Humanities – Renaissance to Present</td>
<td>3</td>
</tr>
<tr>
<td>HUM-21</td>
<td>Humanities and Film</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-01B</td>
<td>Introduction to Literature</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-04A</td>
<td>Introduction to World Literature: Ancients to 1650</td>
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<tr>
<td>ENGL-04B</td>
<td>Introduction to World Literature: 1650 to Present</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-06A</td>
<td>Major English Writers</td>
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</tr>
<tr>
<td>ENGL-06B</td>
<td>Major English Writers</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-10</td>
<td>American Literature from Beginnings to Civil War</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-11</td>
<td>American Literature from Post-Civil War to Present</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-14</td>
<td>Introduction to Film</td>
<td>3</td>
</tr>
<tr>
<td>ENGL-18</td>
<td>African and African-American literature</td>
<td>3</td>
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<tr>
<td>PHIL-01/PHIL-01H</td>
<td>Introduction to Philosophy</td>
<td>3</td>
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<tr>
<td>PHIL-03</td>
<td>Ancient Philosophy</td>
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<tr>
<td>PHIL-04</td>
<td>Modern Philosophy</td>
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<tr>
<td>PHIL-05</td>
<td>Contemporary Moral and Social Issues</td>
<td>3</td>
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<tr>
<td>PHIL-12</td>
<td>Logic</td>
<td>3</td>
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<tr>
<td>PHIL-15</td>
<td>Comparative Religions</td>
<td>3</td>
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</table>

Total Units: 18
ASTRONOMY (ASTR)

ASTR-01 PRINCIPLES OF ASTRONOMY
(CSU breadth area B1) (IGETC area 5A)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This is a basic course studying the principles of astronomy beginning with the solar system and continuing through the Milky Way Galaxy and the galaxies beyond. Throughout the course topics relating to the philosophy of science, history of astronomy, tools of the astronomer, and supporting topics of physics are introduced. The course is designed for students satisfying breadth requirements in science and having a general interest in astronomy. (12/06)

ASTR-01L INTRODUCTORY ASTRONOMY LABORATORY
(CSU breadth area B1/B3) (IGETC area 5A)
1 unit: 3 hours lab.
One-way corequisite: ASTR-01. Advisories: ENGL-85; MATH-81 or MATH B.
This is a basic course in astronomy providing laboratory experience and opportunity for observation of the night sky. Specific topics include observations of the solar system and deep sky objects, time studies, planetary motions, telescopes and their applications, spectroscopy, and basic calculations of the astronomer. (12/06)
ATHLETICS (ATHL)

ATHL-01A  INTERCOLLEGIATE BASEBALL  
3 units: 10 hours lab.  
Limitation on enrollment: This is a varsity team sport requiring coach's or academic athletic advisor's approval. Advisory: PHED-12A.  
This is a course teaching theory, practice and game performance of competitive baseball. This course may be repeated three times. (2/11)

ATHL-01B  INTERCOLLEGIATE BASKETBALL  
1.5-3 units: 5-10 hours lab.  
Limitation on enrollment: This is a varsity team sport requiring coach's or academic athletic advisor's approval. Advisory: PHED-12B.  
This course teaches theory, practice and game performance of competitive basketball. This course may be repeated three times. (5/10)

ATHL-01G  INTERCOLLEGIATE SWIMMING  
3 units: 10 hours lab.  
Limitation on enrollment: This is a varsity team sport requiring coach's or academic athletic advisor's approval. Advisory: PHED-13A.  
This course teaches theory, practice and game performance of the competitive sport. This course may be repeated three times. (5/10)

ATHL-01J  INTERCOLLEGIATE WATER POLO  
3 units: 10 hours lab.  
Limitation on enrollment: This is a varsity team sport requiring coach's or academic athletic advisor's approval. Advisory: PHED-13F.  
This is a course teaching theory, practice and game performance of competitive baseball. This course may be repeated three times. (4/11)

ATHL-01L  INTERCOLLEGIATE VOLLEYBALL  
3 units: 10 hours lab.  
Limitation on enrollment: This is a varsity team sport requiring coach's or academic athletic advisor's approval.  
This course teaches theory, practice and game performance of the competitive sport. This course may be repeated three times. (5/10)
Automotive Technology
Career and Technical Education

DEGREES
A.A. - Automotive Technology

CERTIFICATES
Body and Fender
Engine Performance
Suspension and Brakes
Transmissions

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Merced College Automotive Technology program provides students with skills required for efficient diagnosis, maintenance and repair of current automobiles and automobile systems. The program is recognized and certified by the National Automotive Technicians Education Foundation (NATEF) as an Automotive Service Excellence (ASE) program. The automotive program instructors are ASE certified. The Merced College Automotive program is also certified by the California Bureau of Automotive Repair (BAR) to teach the Basic and Enhanced Clean Air CarCourses.

Merced College Automotive Technology offers students training in theory and practice in all automotive systems. Upon successful completion of the program, students are qualified for placement as technicians in the automotive repair industry. Students may apply units earned by successful completion of Automotive Technology courses to one or more specific certificates and/or an Associate of Arts Degree in Automotive Technology.

Career Opportunities
Automotive Service Technicians
Automotive Line Technicians (mid-level)
Automotive Master Technicians
Assistant Service Managers
Service Managers
Parts Specialist
Field Technical Specialists
Director of Fixed Operations
General Managers

Automotive Service Excellence
Merced College is ASE certified in the following automotive areas:
- Engine Repair
- Transmissions and Transaxles
- Drivetrains and Axles
- Suspension and Steering
- Brake Systems
- Electrical/Electronic Systems
- Heating and Air Conditioning
- Engine Performance

Highlights
Merced College also offers weekend smog update classes certified by the Bureau of Automotive Repair for smog technicians. Contact the Career Technical Education secretary or automotive instructors for more information and dates of update classes.

Aaron Gregory (209) 386-6677
B.A.R. Certified Instructor
T-10 Coordinator
Don Hoornaert (209) 384-6175
CERTIFICATE (12/09)

Body and Fender (09001.CL)

For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes
A. Inspect, diagnose, disassemble, repair, replace and service components/systems in student’s area of specialization.
B. Work safely and responsibly within all shop safety and environmental guidelines and standards.
C. Demonstrate competency in accessing and applying technical service information.

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<tbody>
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<td>Automotive Mechanics</td>
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</tr>
<tr>
<td>AUTO-32</td>
<td>Wheel Alignment and Suspension</td>
<td>4</td>
</tr>
<tr>
<td>AUTO-50</td>
<td>Auto Body Repair and Painting</td>
<td>4</td>
</tr>
<tr>
<td>AUTO-51</td>
<td>Advanced Auto Body Repair and Refinishing</td>
<td>4</td>
</tr>
<tr>
<td>AUTO-62</td>
<td>Basic Automotive Electronics for Technicians</td>
<td>3</td>
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<tr>
<td>AUTO-65</td>
<td>Automotive Parts and Service Advising</td>
<td>4</td>
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<tr>
<td>WELD-06</td>
<td>Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding</td>
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</table>

CERTIFICATE (12/11)

Engine Performance (09002.CL)

For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes:
A. Inspect, diagnose, disassemble, repair, replace and service components/systems in student’s area of specialization.
B. Work safely and responsibly within all shop safety and environmental guidelines and standards.
C. Demonstrate competency in accessing and applying technical service information.

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<tr>
<td>AUTO-65</td>
<td>Automotive Parts and Service Advising</td>
<td>4</td>
</tr>
</tbody>
</table>

CERTIFICATE (12/09)

Suspension and Brakes (09004.CL)

For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes:
A. Inspect, diagnose, disassemble, repair, replace and service components/systems in student’s area of specialization.
B. Work safely and responsibly within all shop safety and environmental guidelines and standards.
C. Demonstrate competency in accessing and applying technical service information.

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<td>Wheel Alignment and Suspension</td>
<td>4</td>
</tr>
<tr>
<td>AUTO-33</td>
<td>Automotive Brake Systems</td>
<td>4</td>
</tr>
<tr>
<td>AUTO-47</td>
<td>Engine Performance</td>
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<tr>
<td>AUTO-48B</td>
<td>Special Problems in Engine Performance</td>
<td>2</td>
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<tr>
<td>AUTO-55</td>
<td>Basic and Enhanced Clean Air Car Course</td>
<td>5</td>
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<tr>
<td>AUTO-62</td>
<td>Basic Automotive Electronics for Technicians</td>
<td>3</td>
</tr>
<tr>
<td>AUTO-65</td>
<td>Automotive Parts and Service Advising</td>
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</table>

Program Student Learning Outcomes:
A. Inspect, diagnose, disassemble, repair, replace and service components/systems in student’s area of specialization.
B. Work safely and responsibly within all shop safety and environmental guidelines and standards.
C. Demonstrate competency in accessing and applying technical service information.

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<td>Automotive Parts and Service Advising</td>
<td>4</td>
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</tbody>
</table>
CERTIFICATE (12/09)
Transmissions (09006.CL)

For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes
A. Inspect, diagnose, disassemble, repair, replace and service components/systems in student’s area of specialization.
B. Work safely and responsibly within all shop safety and environmental guidelines and standards.
C. Demonstrate competency in accessing and applying technical service information.

AUTO-04 Automotive Mechanics ........................................... 3
AUTO-36 Automotive Manual Transmissions and Drive Trains 4
AUTO-46 Automatic Transmissions .......................................... 4
AUTO-62 Basic Automotive Electronics for Technicians .......... 3
AUTO-65 Automotive Parts and Service Advising ............... 4

Recommended Sequence:
A.A. - Automotive Technology (09000.AA)
Body and Fender (09001.CL)
Engine Performance (09002.CL)
Suspension and Brakes (09004.CL)
Transmissions (09006.CL)

Automotive Program Sequence of Courses can be found at the web address below:
http://www.mccd.edu/academics/divisions/it/auto/index.html

AUTOMOTIVE TECHNOLOGY (AUTO)

AUTO-04 AUTOMOTIVE MECHANICS
3 units: 3 hours lecture.
Advisories: ENGL-81, ENGL 84; and MATH-80.
This class is designed for students without prior experience in automotive mechanics. It is a study of fundamental theory and operation of the components that make up the major automotive systems with the purpose of giving the student general knowledge of the automobile. Major emphasis is given to operational principles of the automobile and related terminology. (12/06)

AUTO-32 WHEEL ALIGNMENT AND SUSPENSION
4 units: 3 hours lecture, 3 hours lab.
Advisories: AUTO-04; ENGL-85; MATH-80.
This course is designed to provide the technical knowledge and experience required for aligning and servicing suspension systems on modern automobiles. Laboratory exercises will provide the student an opportunity to develop entry-level skills in the use of machines and equipment commonly used in wheel alignment, tire service, and front-end repairs. (3/05)

AUTO-33 AUTOMOTIVE BRAKE SYSTEMS
4 units: 3 hours lecture, 3 hours lab.
Advisories: AUTO-04, AUTO-62; ENGL-85; MATH-80.
This course is for students without prior experience in automotive brake repair. The course covers theory, service, and repair of conventional and common anti-lock brake systems (A.B.S.) Laboratory exercises will provide the student the opportunity to develop skills and knowledge in the use of tools and equipment necessary in the repair and service of automotive brake systems. (3/05)

AUTO-34 AUTOMOTIVE ENGINE PARTS AND COMPONENTS
4 units: 3 hours lecture, 3 hours lab.
Advisories: AUTO-04, AUTO-62; ENGL-85; MATH-80.
This course is designed for the student without any prior experience in standard transmissions or drive axles. The class will provide technical information required for understanding and repairing of manual transmissions and drive trains. Laboratory exercise will provide the student with proper repair procedures and use of related tools and equipment. Standard transmissions, transaxles, differentials, drivelines, and related components will be covered. (4/04)

AUTO-35 AUTOMATIC TRANSMISSIONS AND DRIVE TRAINS
4 units: 3 hours lecture, 3 hours lab.
Advisories: AUTO-04; ENGL-85; MATH-80.
This course is designed for the student without any prior experience in standard transmissions or drive axles. The class will provide technical information required for understanding and repairing of manual transmissions and drive trains. Laboratory exercise will provide the student with proper repair procedures and use of related tools and equipment. Standard transmissions, transaxles, differentials, drivelines, and related components will be covered. (4/04)

AUTO-36 AUTOMOTIVE MANUAL TRANSMISSIONS AND DRIVE TRAINS
4 units: 3 hours lecture, 3 hours lab.
Advisories: AUTO-04; ENGL-85; MATH-80.
This course is designed for the student without any prior experience in standard transmissions or drive axles. The class will provide technical information required for understanding and repairing of manual transmissions and drive trains. Laboratory exercise will provide the student with proper repair procedures and use of related tools and equipment. Standard transmissions, transaxles, differentials, drivelines, and related components will be covered. (4/04)

AUTO-37 AUTOMOTIVE ENGINE PERFORMANCE
4 units: 3 hours lecture, 3 hours lab.
Advisories: AUTO-04; ENGL-81, MATH-80.
This course covers the testing and service of automotive fuel systems, including fuel injection systems, electronic engine controls, and emission controls. Testing equipment will be used during in-car engine condition diagnosis. Also included will be minor machining operations that are used in engine rebuilding and repairing. (2/12)

AUTO-38 AUTOMOTIVE ELECTRICAL SYSTEMS
4 units: 3 hours lecture, 3 hours lab.
Prerequisite: AUTO-04. Advisories: AUTO-42; ENGL-81, MATH-80.
This course covers automotive electrical systems and includes a review of electron theory, magnetism, and semiconductors. The student will acquire technical and working knowledge of starting, charging and ignition systems and components. The student will acquire working and technical knowledge of electrical accessories and accessory circuits. The use of special service tools and electronic diagnostic equipment will be included. (10/11)

AUTO-39 AUTOMOTIVE FUEL SYSTEMS
4 units: 3 hours lecture, 3 hours lab.
This course covers the testing and service of automotive fuel systems, including fuel injection systems, electronic engine controls, and emission controls. (10/11)

AUTO-40 AUTOMOTIVE AIR CONDITIONING, HEATING SYSTEM, COOLING SYSTEM
4 units: 3 hours lecture, 3 hours lab.
Advisories: AUTO-04; ENGL-81, ENGL-84; MATH-80.
This is a basic course in the principles of operation of automotive air conditioning, heating system, and cooling system. The course covers theory, system controls, troubleshooting, service, and repairs. Lab emphasis consists of system diagnosis, servicing, repairs, and preventive maintenance on live vehicles. (5/06)

AUTO-41 AUTOMOTIVE ENGINES
4 units: 3 hours lecture, 6 hours lab.
One-way corequisite: AUTO-04. Advisories: AUTO-04; ENGL-81, MATH-80.
This course covers the testing and service of automotive fuel systems, including fuel injection systems, electronic engine controls, and emission controls. (10/11)

AUTO-42 AUTOMOTIVE ELECTRICAL SYSTEMS
4 units: 3 hours lecture, 3 hours lab.
Prerequisite: AUTO-04. Advisories: AUTO-42; ENGL-81, MATH-80.
This course covers automotive electrical systems and includes a review of electron theory, magnetism, and semiconductors. The student will acquire technical and working knowledge of starting, charging and ignition systems and components. The student will acquire working and technical knowledge of electrical accessories and accessory circuits. The use of special service tools and electronic diagnostic equipment will be included. (10/11)

AUTO-43 AUTOMOTIVE FUEL SYSTEMS
4 units: 3 hours lecture, 3 hours lab.
This course covers the testing and service of automotive fuel systems, including fuel injection systems, electronic engine controls, and emission controls. (10/11)

AUTO-44 AUTOMOTIVE AIR CONDITIONING, HEATING SYSTEM, COOLING SYSTEM
4 units: 3 hours lecture, 3 hours lab.
Advisories: AUTO-04; ENGL-81, ENGL-84; MATH-80.
This is a basic course in the principles of operation of automotive air conditioning, heating system, and cooling system. The course covers theory, system controls, troubleshooting, service, and repairs. Lab emphasis consists of system diagnosis, servicing, repairs, and preventive maintenance on live vehicles. (5/06)

AUTO-45 AUTOMOTIVE TRANSMISSIONS
4 units: 2 hours lecture, 6 hours lab.
Advisories: AUTO-04, AUTO-62; ENGL-85; MATH-80.
This course will cover domestic and import automatic transmissions and transaxles. Rebuilding will include diagnosis, inspection, repair, and testing. Theory will cover power flow, apply devices, hydraulics, torque converters, and shift controls. (4/04)
AUTO-47 ENGINE PERFORMANCE
2 units: 1 hour lecture, 3 hours lab.
Prerequisite: AUTO-42, AUTO-43. Advisories: ENGL-81; MATH-80.
This course is a study in the diagnosis of automotive electrical and computer controlled fuel and ignition systems. The course will cover charging and starting circuits, computer controlled fuel injection and ignition systems and emissions control devices. All integrated systems will be included as they relate to live maintenance and diagnostic procedures. Advanced systems diagnosis and maintenance of these circuits will receive special attention. (10/11)

AUTO-48A SPECIAL PROBLEMS IN AUTOMOTIVE TRANSMISSIONS AND DRIVE TRAINS
2 units: 6 hours lab.
Prerequisite: AUTO-36, or AUTO-46 and AUTO-62. Advisories: ENGL-81, ENGL-84; MATH-80.
This course is designed to permit the student to gain additional hands on experience in areas covered in the objectives of AUTO-36 or AUTO-46. This course will help prepare the student for employment in the automotive repair industry with entry level skills. AUTO-36 is the prerequisite if the student’s emphasis will be in manual transmissions and AUTO-46 and AUTO-62 will be the prerequisite if the student’s emphasis will be in automatic transmissions. (4/09)

AUTO-48B SPECIAL PROBLEMS IN ENGINE PERFORMANCE
2 units: 6 hours lab.
Prerequisite: AUTO-47. Advisories: ENGL-81, ENGL-84.
This course is designed to permit the student to gain additional hands on experience in areas covered in the objectives of AUTO-47. This course will help prepare the student for employment in the automotive repair industry with entry level skills. (10/08)

AUTO-48C SPECIAL PROBLEMS IN AUTOMOTIVE ENGINES
2 units: 6 hours lab.
Prerequisite: AUTO-41. Advisories: ENGL-81, ENGL-84.
This course is designed to permit the student to gain additional hands on experience in areas covered in the objectives of AUTO-41. This course will help prepare the student for employment in the automotive repair industry with entry level skills. (10/08)

AUTO-48D SPECIAL PROBLEMS IN AUTOMOTIVE SUSPENSIONS
2 units: 6 hours lab.
Prerequisite: AUTO-32. Advisories: ENGL-81, ENGL-84; MATH-80.
This course is designed to permit the student to gain additional hands on experience in areas covered in the objectives of AUTO-32. This course will help prepare the students for employment in the automotive repair industry with entry level skills. (4/09)

AUTO-48E SPECIAL PROBLEMS IN AUTOMOTIVE BRAKES
2 units: 6 hours lab.
Prerequisites: AUTO-33, AUTO-62. Advisories: ENGL-81, ENGL-84; MATH-80.
This course is designed to permit the student to gain additional hands on experience in areas covered in the objectives of AUTO-33. This course will help prepare the student for employment in the automotive repair industry with entry level skills. (4/09)

AUTO-48F SPECIAL PROBLEMS IN AUTO BODY REPAIR AND PAINTING
1.5-2.0 units: 4.5-6 hours lab.
Prerequisite: AUTO-50. Advisories: WELD/MECH-06, ENGL-81, ENGL-84; MATH-80.
This course will provide the student additional time to develop and complete techniques, concepts, and skills learned in AUTO-50 (Auto Body Repair and Painting). The student will be provided with sufficient time to complete projects started in other classes. The course may be repeated three times. (4/08)

AUTO-50 AUTO BODY REPAIR AND PAINTING
4 units: 2 hours lecture, 6 hours lab.
Advisories: ENGL-81, ENGL-84; MATH-80; WELD-06/MECH-06.
This course is an introduction to auto body repair and painting. Methods of metal repair will include shrinking, stretching, contouring, and plastic filling. Proper use of specialized hand tools and power tools will be emphasized. Various automotive primers and paints and their application will be covered. Application of paint, spraying techniques, and spray equipment maintenance will receive special attention. (9/07)

AUTO-51 ADVANCED AUTO BODY REPAIR AND REFINISHING
4 units: 2 hours lecture, 6 hours lab.
Prerequisite: AUTO-50. Advisories: ENGL-81, ENGL-84; MATH-80.
This course involves repairing and refinishing of vehicles with body and finish damage. Vehicle panel repair or replacement through proper tools and equipment will be covered. Students will receive instruction in the proper choice of paints, repairing techniques, cost estimating, and customer relations. Training in advanced painting techniques will be included to meet industry standards. (9/07)

AUTO-55 BASIC AND ENHANCED CLEAN AIR CAR COURSE
5 units: 4.5 hours lecture, 1.5 hours lab.
Prerequisite: AUTO-47. Advisories: ENGL-81, ENGL-84; MATH-80.
This course is approved by the California Bureau of Automotive Repair for technicians seeking basic (EB) and enhanced (EA) emission control licenses. It is designed especially for the automobile technician preparing for the California Smog Check License. Students who do not have one year of trade experience in emissions/tune-up or required courses and certificates will not be able to take the California state licensing examination. Automobile electrical, fuel, emission and engine management systems will be reviewed. Emphasis will be given to emission systems and vehicle emission testing. Demonstrations of equipment related to and required for emission inspection, will be provided using industry certified equipment. (12/09)

AUTO-62 BASIC AUTOMOTIVE ELECTRONICS FOR TECHNICIANS
3 units: 2.5 hours lecture, 1.5 hours lab.
Advisories: MATH-80; ENGL-81 and ENGL-84.
This course is designed to provide the automotive student with a strong background in basic electrical concepts. This will help the student to troubleshoot electrical system problems with the aid of technical information and test equipment. The class will also provide the necessary electrical theory for the more advanced automotive classes. (01/07)

AUTO-65 AUTOMOTIVE PARTS AND SERVICE ADVISING
4 units: 3.5 hours lecture, 1.5 hours lab.
Prerequisite: AUTO-04. Advisories: ENGL-81, ENGL-84; AOM-60; MATH-80.
This course will cover the duties and responsibilities of automotive parts and service advisors working at independent and dealership-based stores. Course content will include service and parts merchandising and communication skills, integrated computer management software, cost estimation, enhancing customer satisfaction, scheduling, inventory control, hazardous materials, warranties, lemon laws, and documentation requirements. (3/05)
DEGREE
A.S. - Biological Science

Program Description
The student majoring in biological science is generally preparing for transfer to a four-year institution and a career in research, teaching, lab technology, one of the health care professions, or related fields. Math requirements for biology majors vary widely. Investigate the math requirements of the four-year schools to which the student intends to apply and design an educational plan accordingly.

DEGREE (4/09)
A.S. - Biological Science (04100.AS)

For an Associate in Science Degree in Biological Science, a student must meet the basic graduation requirements (CHEM-04A and BIOL-04A or BIOL-04AH should be taken for science breadth), and complete the courses listed below.

Program Student Learning Outcomes
A. Organize, analyze and interpret observations and predictions about the natural world using the scientific method.
B. Identify and describe cellular and multicellular processes and structures and relate them to their functions.
C. Analyze patterns and mechanisms of genetics from the molecular to the population level.
D. Recognize the ecological relationships between organisms and their environment and the environmental impact of population growth.
E. Explain principles and mechanisms of evolution and recognize the resulting major groups of organisms as they are arranged in currently recognized taxa.
F. Develop an awareness of the careers and professions available in the biological sciences and are prepared to transfer to appropriate schools.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Description</th>
<th>Fall 1</th>
<th>Fall 2</th>
<th>Spring 1</th>
<th>Spring 2</th>
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<tr>
<td>BIOL-04A</td>
<td>3</td>
<td>Environmental Science</td>
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<td>BIOL-09</td>
<td>3</td>
<td>Introduction to Genetics</td>
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<tr>
<td>BIOL-20</td>
<td>3</td>
<td>Microbiology</td>
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<tr>
<td>BIOL-31</td>
<td>4</td>
<td>Biotechnology I: Basic Lab Techniques &amp; Theory</td>
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<tr>
<td>CHEM-04A</td>
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<td>CHEM-12A</td>
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<td>Organic Chemistry I</td>
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<tr>
<td>CHEM-12B</td>
<td>5</td>
<td>General Chemistry II</td>
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<tr>
<td>CHEM-02A</td>
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<tr>
<td>MATH-04A</td>
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<td>Calculus I</td>
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<td>MATH-05A</td>
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<tr>
<td>MATH-05B</td>
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<td>Elementary Statistics</td>
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<tr>
<td>MATH-12</td>
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<td>Fortran Programming</td>
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<td>MATH-14</td>
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<td>C++ Programming</td>
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<td>PHYS-02A</td>
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<td>General Physics</td>
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<td>PHYS-02B</td>
<td>4</td>
<td>General Physics</td>
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</tbody>
</table>

Recommended Sequence: A.S. - Biological Science (04100.AS)

Calculus-based Option 1: CHEM-02A is a prerequisite for CHEM-04A; if a student has done well in high school chemistry, they may take CHEM-04A without first taking CHEM-02A (a prerequisite challenge must be submitted). The following course sequence options assume that either CHEM-02A has already been taken or that the student will enroll directly in CHEM-04A. Additional units can be taken as breadth or elective courses.

Calculus-based Option 1:

Fall 1
- BIOL-04A
- CHEM-04A
- MATH-04A

Spring 1
- BIOL-04B
- CHEM-04B
- MATH-04B

Fall 2
- CHEM-12A
- PHYS-02A

Spring 2
- CHEM-12B
- PHYS-02B

Calculus-based Option 2:

Fall 1
- BIOL-04A
- CHEM-04A
- MATH-05A

Spring 1
- BIOL-04B
- CHEM-04B
- MATH-05B

Fall 2
- CHEM-12A
- PHYS-02A

Spring 2
- CHEM-12B
- PHYS-02B

Non-Calculus-based Option:

Fall 1
- BIOL-04A

Fall 2
- CHEM-12A

Spring 2
- CHEM-12B

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BIOL-01 GENERAL BIOLOGY FOR NON-MAJORS
(CSU breadth area B2/B3) (IGETC area 5B)
4 units: 3 hours lecture, 3 hours lab.
Limitation on enrollment: This course is not open to students having a C or better in BIOL-04A or BIOL-04AH. Prerequisite: ENGL-85.
This is an introductory-level course designed for non-majors. Areas stressed include the origin of life, structure and function of cells, basic processes of life, reproduction, ecology, microbiology, evolution, classification, genetics, and metabolic processes. (11/08)

BIOL-02 HUMAN BIOLOGY
(CSU breadth area B2/B3) (IGETC area 5B)
4 units: 3 hours lecture, 3 hours lab.
Limitation on enrollment: This course is not open to students having a C or better in BIOL-04A or BIOL-04AH. Prerequisite: ENGL-85.
This course is an introduction to the principles of biology with an emphasis on humans. Topics covered include scientific method, cell structure and function, biochemistry, metabolism, cell division, heredity, biotechnology, evolution, anatomy and physiology of the human body, development and aging, disease, and ecology. This course is recommended for allied health students. (11/08)

BIOL-04A FUNDAMENTALS OF BIOLOGY: THE CELL AND EVOLUTION
(CSU breadth area B2/B3) (IGETC area 5B)
4 units: 3 hours lecture, 3 hours lab.
One-way corequisite: CHEM-04A. Advisories: BIOL-01 or BIOL-02; ENGL-85.
This course is a study of the principles of biology. Areas of study will include aspects of the philosophy of science, the chemistry of life, the cell and cellular organization, biological membranes, energy transfer including photosynthesis and cellular metabolism, mitosis/meiosis, and molecular biology. Genetics will include Mendelian genetics, human genetics and Biotechnology. This course is intended for science majors for pre-medical, pre-veterinarian, pre-dental, pre-optometry, and pre-pharmacy majors. (5/09)

BIOL-04AH HONORS FUNDAMENTALS OF BIOLOGY: THE CELL AND EVOLUTION
(IGETC area 5B)
4 units: 3 hours lecture, 3 hours lab.
Limitation on enrollment: Enrollment in the Merced College’s Honors Program. See the college catalog. One-way corequisite: CHEM-04A. Advisories: BIOL-01 or BIOL-02; ENGL-85.
This course is intended for science majors enrolled in the honors program and focuses on the principles of biology. Areas of study will include aspects of the philosophy of science, the chemistry of life, the cell and cellular organization, biological membranes, energy transfer including photosynthesis and cellular metabolism, mitosis/meiosis, and molecular biology. Genetics will include Mendelian genetics, human genetics and biotechnology. This course is intended for science majors for pre-medical, pre-veterinarian, pre-dental, pre-optometry, and pre-pharmacy majors. (5/09)
BIOL-13 GENERAL ZOOLOGY
(CSU breadth area B2/B3) (IGETC area 5B)
5 units: 3 hours lecture, 6 hours lab.
Prerequisite: BIOL-04A or BIOL-04AH. Advisory: ENGL-85.
This course is an introduction to the principles of animal biology. The phylogenetic series, structure, function, heredity, comparative relationships, and evolution of the invertebrates and vertebrates will be studied. This course is designed for life science majors and students in pre-professional programs. (Note: The laboratory portion of this course includes required field trips.) (12/06)

BIOL-16 GENERAL HUMAN ANATOMY
(CSU breadth area B2/B3) (IGETC area 5B)
4 units: 2 hours lecture, 6 hours lab.
Prerequisite: BIOL-01 or BIOL-02 or BIOL-50. Advisory: ENGL-85.
This course is an intensive study of the structure of the human body. Consideration is given to the skeletal, muscular, circulatory, respiratory, digestive, excretory, reproductive, and nervous systems. Special emphasis is placed on the needs of students majoring in biology, nursing, physical education, and medical sciences. (2/09)

BIOL-18 PRINCIPLES OF PHYSIOLOGY
(CSU breadth area B2/B3) (IGETC area 5B)
4 units: 3 hours lecture, 3 hours lab.
Prerequisites: BIOL-01 or BIOL-02 or BIOL-16; CHEM-02A. Advisory: ENGL-85.
This course is a general lecture and laboratory course in human physiology, including a study of blood and circulation, respiration, muscle activity, endocrine glands, digestion, excretion, and the functions and activities of the brain, nerves, and sense organs. (2/09)

BIOL-20 MICROBIOLOGY
(CSU breadth area B2/B3) (IGETC area 5B)
4 units: 2 hours lecture, 6 hours lab.
Prerequisite: BIOL-01 or BIOL-02 or BIOL-04A or BIOL-04AH. Advisory: ENGL-85.
This course is an introductory course familiarizing students with basic laboratory techniques and fundamental topics of microbiology. Laboratory work includes aseptic techniques, staining procedures, biochemical characterization, serology, and DNA technology used in the identification of microorganisms. Lecture topics consist of a historical overview, genetics, metabolism, cell physiology, growth requirements, immunology, and host-parasite interactions between humans and bacteria, viruses, protozoa, and helminthes. The course is designed for students in any of the allied health professions. (2/09)

BIOL-25 THE OCEANS
(CSU breadth area B2) (IGETC area 5B)
3 units: 3 hours lecture.
This is an introductory study of the modern biology of the oceans. The marine world is treated as man’s last frontier on earth; various discoveries, problems and methods of the marine biologist will be emphasized. Lecture topics will include classification of marine environments, ocean currents, tides, continental drifts, marine resources, pollution, and the biology of important marine fishes and invertebrates. A number of these topics will be related to the marine ecology of the California coast.

BIOL-31 BIOTECHNOLOGY I: BASIC LABORATORY TECHNIQUES AND THEORY
[CILC areas C,F]
4 units: 2 hours lecture, 6 hours lab.
Prerequisite: BIOL-01 or BIOL-02 or BIOL-04A or BIOL-04AH; CHEM-02A or CHEM-04A. One-way corequisite: BIOL-09. Advisories: BIOL-20; ENGL-85; MATH-81 or MATH-B.
This is an introductory course in biotechnology theory and techniques. This course will cover laboratory safety, good laboratory practices and cGMP; instrumentation; laboratory math; preparation of solutions; DNA isolation, manipulation, transformation, and quantization; PCR and analysis of PCR products; electrophoresis; bacterial transformation; and introduction to basic tissue culture methods which include sterile technique and media preparation. The primary focus of the course will be the development of basic laboratory skills and the principles underlying them. This course is recommended for students seeking a certificate or AS degree in biotechnology; for students majoring in biotechnology at a 4-year institution; or for students transferring to a university who are interested in undergraduate research. (2/09)

BIOL-33 BIOTECHNOLOGY II: ADVANCED LABORATORY TECHNIQUES AND THEORY
4 units: 2 hours lecture, 6 hours lab.
Prerequisite: BIOL-31. Advisories: BIOL-20; ENGL-85; MATH-81 or MATH-B.
This is an advanced course on techniques in biotechnology. This course is designed to build upon the skills developed in Biology 31. The course will cover PCR, restriction enzyme digest, subcloning, gene expression, genomic library construction, primary cell culture, mammalian cell expression systems, Southern and Western blotting, and protein quantization. Field trips may be required. (2/09)

BIOL-40 EXPERIENCE IN HUMAN DISSECTION
1 unit: 3 hours lab.
Limitation on enrollment: Eight students per semester. Prerequisites: BIOL-16. Advisory: ENGL-85.
This course is an experience in human cadaver dissection for students with a special interest in the science of anatomy. Emphasis is on regional study of gross structure at a level that assists students pursuing careers in allied health professions. Pre-registration counseling with instructor is highly recommended. (10/07)

BIOL-50 SURVEY OF ANATOMY AND PHYSIOLOGY
3 units: 3 hours lecture.
Prerequisite: ENGL-85.
This is a course in basic anatomy and physiology of the human body. It is designed as an elementary course for students with limited background in science or biology. (3/12)
Biotechnology
Math, Science and Engineering

DEGREE
A.S. - Biotechnology

CERTIFICATE
Biotechnology

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The student majoring in Biotechnology is generally preparing for employment in the biotechnology industry or for transfer to a four-year institution to complete the requirements for a bachelor’s degree.

DEGREE (4/09)
A.S. - Biotechnology (04130.AS)

The student majoring in Biotechnology is generally preparing for employment in the biotechnology industry or for transfer to a four-year institution to complete the requirements for a bachelor’s degree. For the Associate in Science Degree in Biotechnology, a student must meet the basic graduation requirements and complete 29-31 units from the courses listed below. It is intended that the student complete both courses in the CHEM-02A sequence, or both courses in the CHEM-04A sequence, with the first course in the sequence satisfying the physical science breadth requirements. BIOL-04A or BIOL-04AH (for students transferring to a university) or BIOL-01 or BIOL-02 should be taken to satisfy the life science breadth requirement.

Program Student Learning Outcomes
A. Comprehend and apply laboratory math skills where appropriate.
B. Comprehend underlying theory of and apply basic biotechnology laboratory skills.
C. Prepare, comprehend, evaluate, and maintain standard documents associated with the biotechnology workplace.
D. Interpret federal, state, and local safety regulations and apply them to the biotechnology workplace.
E. Comprehend, interpret and apply federal, state and local regulations as they relate to quality control of products produced in the laboratory.
F. Demonstrate problem solving skills in the biotechnology laboratory.
G. Demonstrate an appropriate work ethic and demonstrate teamwork skills.

<table>
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<tr>
<th>Units</th>
<th>Course</th>
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<tbody>
<tr>
<td>3</td>
<td>BIOL-09 Introduction to Genetics</td>
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<tr>
<td>4</td>
<td>BIOL-20 Microbiology</td>
</tr>
<tr>
<td>4</td>
<td>BIOL-31 Introduction to Biotechnology I</td>
</tr>
<tr>
<td>4</td>
<td>BIOL-33 Biotechnology II: Advanced Laboratory Techniques</td>
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<tr>
<td>4</td>
<td>CHEM-02B Introductory Chemistry</td>
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<tr>
<td>5</td>
<td>CHEM-04B General Chemistry</td>
</tr>
<tr>
<td>5</td>
<td>And the remaining 10-11 units from the following courses:</td>
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<tr>
<td>5</td>
<td>BIOL-04B Diversity of Life: Morphology and Physiology</td>
</tr>
<tr>
<td>3</td>
<td>BIOL-06 Environmental Science</td>
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<tr>
<td>4</td>
<td>BIOL-16 General Human Anatomy</td>
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<tr>
<td>4</td>
<td>BIOL-18 Principles of Physiology</td>
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<tr>
<td>4</td>
<td>CPSC-01 Introduction to Management Information Systems</td>
</tr>
<tr>
<td>3</td>
<td>CPSC-30 Computer Applications</td>
</tr>
<tr>
<td>3</td>
<td>ENTC-30 Introduction to Environmental Technology</td>
</tr>
<tr>
<td>3</td>
<td>PLSC-10 Elements of Plant Science</td>
</tr>
</tbody>
</table>

29-31
CERTIFICATE (12/09)
Biotechnology (04130.CL)

For the Certificate of Achievement in Biotechnology, a student must complete 29-31 units from the courses listed below. It is intended that the student complete both courses in the CHEM-02A sequence or both courses in the CHEM-04A sequence. BIOL-04A or BIOL-04AH (for students transferring to a university) or BIOL-01 or BIOL-02 should be taken to satisfy the prerequisite requirement for BIOL-31.

Program Student Learning Outcomes
A. Comprehend and apply laboratory math skills where appropriate.
B. Comprehend underlying theory of and apply basic biotechnology laboratory skills.
C. Prepare, comprehend, evaluate, and maintain standard documents associated with the biotechnology workplace.
D. Interpret federal, state, and local safety regulations and apply them to the biotechnology workplace.
E. Comprehend, interpret and apply federal, state and local regulations as they relate to quality control of products produced in the laboratory.
F. Students will demonstrate problem-solving skills in the biotechnology laboratory.
G. Students will demonstrate an appropriate work ethic and demonstrate teamwork skills.

Suggested Sequence: A.S. - Biotechnology (04130.AS) and Certificate Biotechnology (04130.CL)
Additional units can be taken as breadth or elective courses.

BIOL-09 Introduction to Genetics ........................................... 3
BIOL-20 Microbiology .............................................................4
BIOL-31 Biotechnology I: Basic Lab Techniques & Theory .... 4
BIOL-33 Biotechnology II: Advanced Laboratory Techniques and Theory .........................................................4
CHEM-02B Introductory Chemistry: Introduction to Organic & Biochemistry ...........................................4
or CHEM-04B General Chemistry ...........................................5

And the remaining 10-11 units from the following courses:
BIOL-04B Diversity of Life: Morphology and Physiology .... 5
or BIOL-04BH Honors Diversity of Life: Morphology and Physiology .........................................................5
BIOL-06 Environmental Science ........................................... 3
BIOL-16 General Human Anatomy ...........................................4
BIOL-18 Principles of Physiology ...........................................4
CPSC-01 Introduction to Management Information Systems ... 4
or CPSC-30 Computer Applications ...........................................3
ENTC-30 Introduction to Environmental Technology ..........3
PLSC-10 Elements of Plant Science ........................................3

29-31

*Note: A student may not take BIOL-01 or BIOL-02 for credit after having taken BIOL-04A or BIOL-04AH.
Business
Allied Health, Business, and Public Safety

DEGREES
A.A. - Business Administration
A.A. - General Business
A.A. - Small Business Entrepreneurship (see Entrepreneurship)

CERTIFICATE
General Business
Small Business Entrepreneurship (see Entrepreneurship)

Gainful Employment Disclosure Metrics
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https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%2123

Program Description
The American economy offers ever-increasing opportunities in business careers and Merced College provides training in a variety of business fields. The suggested courses of study prepare the student for immediate employment in business.

The Business Administration program is designed to prepare students who plan to transfer to a four-year college or university to earn a Bachelor in Arts or Science Degree. Students take classes to complete general education requirements and combine business classes in accounting, computer science, and business law to complete the General Business program. Upon transferring to a four-year college or university, students may choose a concentration in areas such as accounting, business, education, executive secretarial administration, finance, management information, marketing, and real estate.

Highlights:
Career training and retraining.
Lower division courses for students planning to transfer to four-year colleges and universities.
Short, intensive programs for those who wish to specialize in one area with immediate employment in mind.

DEGREE
A.A. - Business Administration (05100.AA)
The mission of the Merced College BUSINESS ADMINISTRATION (A.A.) program is to provide the first two years of a well-balanced business program for students planning transfer to a four-year institution and completion of a Bachelor of Science in Business. We seek to educate the whole person, to help students develop a global perspective, to provide students a basis for life-long learning, to encourage students to seek opportunities to serve others, and to prepare students for success in the business environment of the 21st century.

Certain basic courses are included in the first two years of study which should give the student the proper background for upper division study in Business Administration. Students must meet the graduation requirements and complete the following major requirements.

Program Student Learning Outcomes
A. Identify and analyze business strengths, weaknesses, opportunities and threats, and formulate recommendations for courses of action.
B. Communicate interpersonally in order to establish positive business relationships; and logically and effectively construct and deliver business presentations in oral and written formats, utilizing a variety of presentation tools and media.
C. Demonstrate awareness of the economic, environmental, social, political, ethical, legal and regulatory, and technological factors on business practice.
D. Work effectively, respectfully, ethically and professionally with people of diverse ethnic, cultural, gender and other backgrounds and with people with different organizational roles, social affiliations and personalities.
E. Recognize and appropriately respond to ethical, legal and strategic concerns relating to human resource and organizational management.
F. Use team building skills and collaborative behaviors in the accomplishment of group goals and objectives.
G. Use quantitative and qualitative tools and methodologies to support organizational decision making, i.e., apply accounting concepts and methods to interpret financial statements for evaluating the financial position and performance of organizations, interpret and analyze accounting information for internal control, planning, performance evaluation, and coordination to continuously improve business processes, and make basic investment and financing decisions for a business using basic financial management concepts and methods.

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<tr>
<th>Units</th>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>4</td>
<td>ACTG-04A</td>
<td>Fundamentals of Financial Accounting</td>
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<tr>
<td>4</td>
<td>ACTG-04B</td>
<td>Fundamentals of Managerial Accounting</td>
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<td>BUS-10</td>
<td>Introduction to Business</td>
</tr>
<tr>
<td>4</td>
<td>BUS-18A</td>
<td>Business Law</td>
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<td>CPSC-01</td>
<td>Introduction to Management Information Systems</td>
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<tr>
<td>3</td>
<td>ECON-01A</td>
<td>Introduction to Macroeconomics</td>
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<td>ECON-01B</td>
<td>Introduction to Microeconomics</td>
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<td>MATH-10</td>
<td>Elementary Statistics</td>
</tr>
<tr>
<td>3</td>
<td>MATH-15</td>
<td>Finite Mathematics</td>
</tr>
</tbody>
</table>

ECON-01A and ECON-01B may be used to meet degree requirements.

Students should refer to the catalog of the school to which they plan to transfer to determine whether that school requires any specific courses in addition to, or other than, those listed above.
A.A - General Business (05150.AA)

The mission of the Merced College GENERAL BUSINESS (A.A.) program is to provide students with general preparation for entry into employment in the business community. We seek to educate the whole person, to help students develop a global perspective, to provide students a basis for life-long learning, to encourage students to seek opportunities to serve others, and to prepare students for success in the business environment of the 21st century.

Students must meet the graduation requirements and complete the following major requirements.

Program Student Learning Outcomes
A. Communicate interpersonally in order to establish positive business relationships; and logically and effectively construct and deliver business presentations in oral and written formats, utilizing a variety of presentation tools and media.

B. Demonstrate comprehension of the core concepts of each business discipline – accounting, finance, information systems, economics, management, and marketing.

C. Analyze business problem situations systematically and effectively, and apply knowledge from multiple disciplines to the problem.

D. Use word-processing, spreadsheet, database, and collaborative software and World Wide Web tools and apply them to analysis of business decision situations.

E. Work effectively, respectfully, ethically and professionally with people of diverse ethnic, cultural, gender and other backgrounds and with people with different organizational roles, social affiliations and personalities.

F. Use team building skills and collaborative behaviors in the accomplishment of group goals and objectives.

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CERTIFICATE

General Business (05150.CT)

The mission of the Merced College GENERAL BUSINESS (Certificate) program is to provide students with general preparation for entry into employment in the business community. We seek to educate the whole person, to help students develop a global perspective, to provide students a basis for life-long learning, to encourage students to seek opportunities to serve others, and to prepare students for success in the business environment of the 21st century.

A Certificate of Achievement will be awarded upon the satisfactory completion of 30 units of course work in this area of study which includes the core courses indicated for the A.A. Degree in General Business.

Program Student Learning Outcomes
A. Communicate interpersonally in order to establish positive business relationships; and logically and effectively construct and deliver business presentations in oral and written formats, utilizing a variety of presentation tools and media.

B. Demonstrate comprehension of the core concepts of each business discipline – accounting, finance, information systems, economics, management, and marketing.

C. Analyze business problem situations systematically and effectively, and apply knowledge from multiple disciplines to the problem.

D. Use word-processing, spreadsheet, database, and collaborative software and World Wide Web tools and apply them to analysis of business decision situations.

E. Work effectively, respectfully, ethically and professionally with people of diverse ethnic, cultural, gender and other backgrounds and with people with different organizational roles, social affiliations and personalities.

F. Use team building skills and collaborative behaviors in the accomplishment of group goals and objectives.

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Suggested electives include:

**DEGREE (2/07)**

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<tr>
<th>Units</th>
<th>Course</th>
<th>Title</th>
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<td>ECON-01A</td>
<td>Introduction to Macroeconomics..............3</td>
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**CERTIFICATE**

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<td>ACTG-51</td>
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<tr>
<td>3</td>
<td>ECON-01A</td>
<td>Introduction to Macroeconomics..............3</td>
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**Suggested electives include:**

**DEGREE (2/07)**

- CPSC-01 Introduction to Management Information Systems....4
- BUS-49A-ZZ Special Topics in Business..................½ - 3
- MGMT-31 Principles of Management........................3
- MDSE-32 Salesmanship......................................3
- MGMT-33 Elements of Effective Leadership....................3

**CERTIFICATE**

- CPSC-01 Introduction to Management Information Systems....4
- BUS-49A-ZZ Special Topics in Business..................½ - 3
- MGMT-31 Principles of Management........................3
- MDSE-32 Salesmanship......................................3
- MGMT-33 Elements of Effective Leadership....................3

Students should refer to the catalog of the school to which they plan to transfer to determine whether that school requires any specific courses in addition to, or other than, those listed above.
Fall 1
BUS-10 Introduction to Business.................................3
ECON-01A Introduction to Macroeconomics....................3

Spring 1
CPSC-01 Introduction to Management Information Systems....4

Fall 2
ACTG-04B Fundamentals of Managerial Accounting............4
ECON-01B Introduction to Microeconomics.....................3
MATH-15 Finite Mathematics.................................3

Spring 2
BUS-18A Business Law..............................................4
MATH-10 Elementary Statistics.................................3

Recommended Sequence: Certificate General Business (05150.CT)

Fall 1
BUS-10 Introduction to Business.................................3
ACTG-51 Applied Accounting.......................................4
AOM-50B Document Formatting & Keyboarding................3

Suggested electives:
CPSC-01 Introduction to Management Information Systems....4

Spring 1
BUS-35 Money Management.........................................3
CPSC-30 Computer Applications..................................3

or
CPSC-31A Beginning Word Processing............................1
and
CPSC-32A Beginning Spreadsheet.................................1
and
CPSC-33A Beginning Databases..................................1

Summer I
BUS-10 Introduction to Business.................................3
BUS-35 Money Management.........................................3

Fall 2
ECON-01A Introduction to Macroeconomics....................3
Suggested elective:
CPSC-01 Introduction to Management Information Systems....4

Spring 2
BUS-18A Business Law..............................................4

Suggested electives:
BUS-49A-ZZ Special Topics in Business.........................½ -3
MGMT-31 Principles of Management................................3
MDSE-32 Salesmanship.............................................3
MGMT-33 Elements of Effective Leadership....................3

Recommended Sequence: A.A. - General Business (05150.AA)

Fall 1
AOM-50B Document Formatting & Keyboarding................3

3 units: 3 hours lecture.

Advisory: CPSC-30; ENGL-85.

This course is an overview of all aspects involved in business. It covers economic foundations, types of business organizations, marketing, money and banking, and finance. This information will be integrated and related to social, political, legal, and international matters affecting the United States. (2/11)

BUS-10 INTRODUCTION TO BUSINESS

3 units: 3 hours lecture.

Advisory: CPSC-30; ENGL-85.

This course is a study of legal principles that govern the conduct of business. Included are surveys of the essential elements of legal history and jurisprudence; judicial, administrative, and alternative dispute resolution; ethics; business crime; torts; contracts and the UCC; bankruptcy; agency relationships; property; administrative law; labor and employment law; international law. Introduction to legal research and brief-writing are also included. (1/09)

BUS-18A BUSINESS LAW

4 units: 4 hours lecture.

Advisories: BUS-10; ENGL-22, ENGL-85.

This course continues and builds on investing concepts introduced in BUS-35, government securities, corporate bonds, stocks, mutual funds, options, and commodities. The overall objective is to prepare students to make personal investment decisions while minimizing risk and earning an acceptable rate of return. (12/08)

BUS-34 FUNDAMENTALS OF INVESTING

3 units: 3 hours lecture.

Prerequisite: BUS-35. Advisories: CPSC-30; ENGL-85; MATH-80.

This course offers instruction in principles and practices of business from the consumer’s point of view. Areas of study include income and wealth distribution; occupational earnings; wise buying; consumer rights, legislation and protective agencies; credit and borrowing; financial services; automobiles; property liability, health, life and disability insurance; Social Security, pensions, annuities; housing; savings and investments; and taxes and estate planning. (10/06)

BUS-35 MONEY MANAGEMENT

3 units: 3 hours lecture.

Advisories: CPSC-30; ENGL-85; MATH-80.

This course covers the business writing patterns of routine, persuasive, and negative messages. Students learn the basic training in listening, speaking, and non-verbal communication in order to develop the skills needed in everyday communication in business. Given a scenario, students create e-mail, memos, letters, proposals, reports and an ePortfolio. Students learn about doing business with other cultures and giving oral business presentations. (3/12)
BUS-49A-ZZ  SPECIAL TOPICS IN BUSINESS

.5-3 units: ½ -3 hours lecture.
Advisory: ENGL-85
This is a course designed to address special topics in business to meet the current needs of students. It will provide the students with access to instruction that will assist them in acquiring the most up-to-date information possible in order to cope with the rapidly changing business and economic environment. (2/07)
Chemistry
Math, Science and Engineering

DEGREE
A.S. - Chemistry
A.S. - Chemistry - Pre-Professional

Program Description
The following Chemistry curriculum is designed for students planning to transfer to a four-year university. It is assumed that the student has completed two years of a foreign language, one year of chemistry, and math through pre-calculus in high school.

An Associate in Science Degree in Chemistry Pre-Professional is for students intending to study one of the professional areas. These areas include medicine, pharmacy, dentistry, chiropractic, and veterinary medicine. The suggested curriculum below should be modified according to the area of study and major selected. Students should see their counselor for assistance in tailoring a program to specific needs.

DEGREE
A.S. - Chemistry (19100.AS)

For an Associate in Science Degree in Chemistry a student must meet the graduation requirements (PHYS-02A or PHYS-04A and a course in the life sciences are suggested as courses to satisfy the breadth requirements in the science area) and complete the courses listed below.

Program Student Learning Outcomes
A. Solve using the appropriate chemical, physical or mathematical principle and express their answer in an appropriate form.
B. Determine the identity, composition or structure using chemical methods, instruments or the technology available in our labs.
C. Communicate their knowledge of chemical principles in written or oral form using the language of chemistry.
D. Predict the properties, structure or quantity of a product of a chemical reaction.
E. Select the appropriate reaction(s), reactants and reaction conditions, to prepare the specific product.
F. Identify applications to other scientific fields and technology areas.

<table>
<thead>
<tr>
<th>Units</th>
<th>Courses</th>
</tr>
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<tbody>
<tr>
<td>5</td>
<td>CHEM-04A General Chemistry</td>
</tr>
<tr>
<td>5</td>
<td>CHEM-04B General Chemistry</td>
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<tr>
<td>5</td>
<td>CHEM-12A Organic Chemistry I</td>
</tr>
<tr>
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<td>CHEM-12B Organic Chemistry II</td>
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<td>4</td>
<td>PHYS-02B General Physics</td>
</tr>
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<td>PHYS-04B Physics</td>
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<td>MATH-04A Calculus I</td>
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<tr>
<td>4</td>
<td>MATH-04B Calculus II</td>
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And select seven units from the following:

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<tr>
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<tr>
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<td>MATH-05B Applied Calculus</td>
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<tr>
<td>3</td>
<td>MATH-06 Elementary Differential Equations</td>
</tr>
<tr>
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<td>MATH-12 FORTRAN Programming</td>
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<td>MATH-14 C++ Programming</td>
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<td>MATH-04C Multivariable Calculus</td>
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<td>MATH-05A Applied Calculus</td>
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<tr>
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<td>MATH-05B Applied Calculus</td>
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</table>

Suggested Sequence: A.S. - Chemistry (19100.AS)

CHEM-02A is a prerequisite for CHEM-04A; if a student has done well in high school chemistry, they may take CHEM-04A without first taking CHEM-02A (a prerequisite challenge must be submitted). The following course sequence options assume that either CHEM-02A has already been taken or that the student will enroll directly in CHEM-04A. The prerequisite for MATH-04A is MATH-02; the following sequence assumes that MATH-02 has been taken by the student. Additional units can be taken as breadth or elective courses.
<table>
<thead>
<tr>
<th>Term</th>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites/Advisories</th>
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<tr>
<td>Spring 1</td>
<td>CHEM-02B</td>
<td>General Chemistry</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>MATH-02B</td>
<td>Calculus II</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PHYS-02A</td>
<td>Physics</td>
<td>4</td>
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<tr>
<td>Fall 2</td>
<td>CHEM-12A</td>
<td>Organic Chemistry I</td>
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<td>MATH-04B</td>
<td>Multivariable Calculus</td>
<td>4</td>
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<tr>
<td></td>
<td>PHYS-04B</td>
<td>Physics</td>
<td>4</td>
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<tr>
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<td>CHEM-12B</td>
<td>Organic Chemistry II</td>
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Suggested Course Sequence: A.S. - Chemistry - Pre-Professional

(19150.AS)

Additional units can be taken as breadth or elective courses.

Calculus-based Option:

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<tr>
<th>Term</th>
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<td>MATH-04A</td>
<td>Calculus I</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Spring (1)</td>
<td>CHEM-04B</td>
<td>General Chemistry</td>
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<td></td>
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<tr>
<td></td>
<td>MATH-04B</td>
<td>Calculus II</td>
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<tr>
<td></td>
<td>PHYS-04B</td>
<td>Physics</td>
<td>4</td>
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</tr>
<tr>
<td>Fall (2)</td>
<td>CHEM-12A</td>
<td>Organic Chemistry I</td>
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<td>MATH-04C</td>
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<td>PHYS-04B</td>
<td>Physics</td>
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<td>Spring (2)</td>
<td>CHEM-12B</td>
<td>Organic Chemistry II</td>
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</tr>
</tbody>
</table>

Students should select elective and breadth courses to finish the A.S. Degree.

CHEMISTRY (CHEM)

CHEM-02A INTRODUCTORY CHEMISTRY

(CSU breadth area B1/B3) (IGETC area 5A)

4 units: 3 hours lecture, 3 hours lab.

This is an introduction to the general principles of inorganic chemistry, atomic and molecular structure, states of matter, solutions, and radioactivity. The class is designed for students majoring in liberal studies, nursing, or agriculture. (5/09)

CHEM-02B INTRODUCTORY CHEMISTRY: INTRODUCTION TO ORGANIC AND BIOCHEMISTRY

(CSU breadth area B1/B3) (IGETC area 5A)

4 units: 3 hours lecture, 3 hours lab.

Prerequisite: CHEM-02A. Advisory: ENGL-85; LRNR-30; MATH-81 or MATH-B.

This is a continuation of CHEM-02A with emphasis on organic and biochemistry. The structure, nomenclature, and properties of organic compounds such as: alkanes, alkenes, arenes, alcohols, thiols, amines, aldehydes, ketones, carboxylic acids and their derivatives are covered. Structure, properties and reactions of biochemical compounds such as carbohydrates, proteins, and lipids are covered and followed through major and minor metabolic pathways. This course is intended for students in liberal studies, agriculture, and health-related fields. It is not for chemistry or science majors. (5/09)

CHEM-04A GENERAL CHEMISTRY

(CSU breadth area B1/B3) (IGETC area 5A)

5 units: 3 hours lecture, 6 hours lab.

Prerequisites: CHEM-02A; MATH-B. Advisory: ENGL-85.

This course is designed to teach general principles of chemistry emphasizing nomenclature, chemical equations, stoichiometry, concentration, gas laws, atomic structure, periodic properties, bonding, intermolecular forces, and crystalline solids. It is designed for the student majoring in chemistry, physics, biology, engineering, premed, or related fields. A student who has not successfully completed the prerequisites of CHEM-02A but has completed high school chemistry with a grade of "C" or higher should consider submitting a prerequisite challenge. (5/09)

CHEM-04B GENERAL CHEMISTRY

(CSU breadth areas B1/B3) (IGETC area 5A)

5 units: 3 hours lecture, 6 hours lab.

Prerequisite: CHEM-04A. Advisory: ENGL-85.

This is a continuation of the general principles of chemistry, with emphasis on kinetics, chemical equilibria, thermodynamics, electrochemistry, nuclear chemistry and transition metal complexes. An introduction to the principles of organic chemistry is included. The lab provides the student with experience in qualitative and quantitative analysis. (5/09)

CHEM-12A ORGANIC CHEMISTRY I

5 units: 3 hours lecture, 6 hours lab.

Prerequisite: CHEM-04B, Advisory: ENGL-85.

This course is a study of the theory and practice of organic chemistry examining bonding, structure, stereochemistry, nomenclature, properties, and reactions of the hydrocarbons and organic halides. Addition, substitution, elimination, and rearrangement reactions are examined. Corresponding mechanisms and energy diagrams are included in the study. Nuclear magnetic resonance, infrared, ultra-violet and mass spectroscopy are introduced. The laboratory includes the study of organic laboratory techniques including the synthesis of organic compounds, separation, characterization, identification, purification, and the use of related instrumentation. This course is directed toward students in science and pre-professional preparation. (5/09)

CHEM-12B ORGANIC CHEMISTRY II

5 units: 3 hours lecture, 6 hours lab.

Prerequisite: CHEM-12A, Advisory: ENGL-85.

This course is a continuation of CHEM-12A expanding the study of organic chemistry to include aromatic hydrocarbons, alcohols, ethers, thiols, sulfides, aldehydes, ketones, carboxylic acid and derivatives, amines and an introduction to the biochemistry of carbohydrates, proteins, and lipids. Included is a further examination of the use of IR, NMR, GC, and Mass Spectroscopy in the identification of organic substances. In the laboratory portion of the course emphasis is placed on the reactions, synthesis, purification, characterization, spectroscopy, and qualitative tests of organic substances. This course is directed toward students in science and pre-professional preparation. (5/09)

CHEM-35A SUCCESS IN INTRODUCTORY CHEMISTRY

1 unit: 1 hour lecture.

Prerequisite: ENGL-84; One-way corequisite: CHEM-02A.

This course is designed to develop the computational skills necessary for success in CHEM-02A. Emphasis is placed on math, nomenclature, and basic concepts. This course is designed specifically for students who are taking CHEM-02A. (2/08)

CHEM-35B SUCCESS IN GENERAL CHEMISTRY

1 unit: 1 hour lecture.

Prerequisite: ENGL-84; One-way corequisite: CHEM-04A.

This course is designed to develop the computational skills necessary for success in the CHEM-04A. Emphasis is placed on math, nomenclature, and basic concepts in general chemistry. This course is intended to increase the student's success in CHEM-04A. (2/08)
Child Development
English, Basic Skills and Child Development

DEGREE
A.A. - Child Development

CERTIFICATES
Child Development: Early Intervention Assistant Specialization
Child Development: Families In Crisis Specialization
Child Development: Infant/Toddler Care Specialization
Child Development: School Age Care Specialization

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E852DCF60&resid=5EE3D05E852DCF60%21223

Program Description
The Merced College Child Development Department offers students classes and training to meet California requirements for credentials and licenses, as well as an Associate of Arts degree. Preparation includes transfer level courses with several that meet general education requirements and Certificates of Achievement. Throughout all courses, students are trained culturally sensitive and family-focused perspectives that emphasize the value of individual differences in your children. The Child Development Department works closely with many community programs to meet the specific needs of Merced County’s early childhood/child care workforce.

Career Opportunities
There are many opportunities for employment in the field of Early Childhood Education. People with training in child development can:
Work with infants, toddlers, preschoolers, and school-aged children in positions including teacher assistants, teachers, directors, and program coordinators.
Open a small child care business, a licensed family child care home or a private child care center.
Become “in-home” child care providers who are hired by parents to do child care for children in the child’s home setting.
Become a foster parent.
Work as a teacher’s aide in elementary school programs.
Transfer to a four-year college or university in fields related to children, schools and families, such as elementary school teachers, social workers, parent educators, special education teachers and early intervention specialists.

Highlights
“Averaging thirty graduates per year,” the Child Development program is one of the largest vocational programs at Merced College. Child Development Certificate and Associate of Arts degree requirements are offered on both the Merced Campus and Los Baños Campus. For the convenience of the students, six of the eight required core courses are offered online. In addition, Merced College participates in three programs to assist students in their success: California Early Childhood Mentor Program (CECMT), Child Development Training Consortium (CDTC), and Temporary Assistance for Needy Families—Child Development Careers Program (TANF-CDC). Please call the Child Development Department at (209) 384-6150 for additional information.

Note to Transfer Students
Students are strongly encouraged to transfer to a 4-year college or university. In several courses, students are given information about pursuing their bachelor, masters, and doctorate degrees. In particular classes, information, materials, and workshops on the Child Development Permit Matrix are shared. The permit matrix covers entry level positions through a master’s degree option. To increase the likelihood that students will transfer, students are required to develop an education plan with a counselor. Increasing numbers of our students are transferring to pursue degrees in child development, liberal studies, and other related fields.
### DEGREE (12/07)
#### A.A. - Child Development (13010.AA)

For an Associate in Arts in Child Development, students must meet the graduation requirements and complete the following 24 unit courses listed below.

**Program Student Learning Outcomes**  
A. Distinguish and display professional behavior as a teacher of young children.  
B. Create appropriate classroom Early Childhood Education environments.  
C. Distinguish appropriate health, safety and nutrition practices in the field of child development.  
D. Relate effectively with families and communities in the role of an Early Childhood Educator.  
E. Examine the basics of administration and be able to apply management skills needed for a teacher in child development.

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<th>Units</th>
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<td>CLDV-02</td>
<td>Child, Family and Community</td>
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<td>CLDV-03</td>
<td>Principles and Practices of Teaching Young Children</td>
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<tr>
<td>CLDV-04</td>
<td>Observation and Assessment</td>
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<tr>
<td>CLDV-05</td>
<td>Health, Safety and Nutrition</td>
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<tr>
<td>CLDV-06</td>
<td>Teaching in a Diverse Society</td>
<td>3</td>
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<tr>
<td>CLDV-07</td>
<td>Introduction to Curriculum for the Young Child</td>
<td>3</td>
</tr>
<tr>
<td>CLDV-07L</td>
<td>Practicum</td>
<td>3</td>
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</tbody>
</table>

### CERTIFICATE (12/07)
#### Child Development: Early Intervention Assistant Specialization (13015.CT)

In addition to the 24 unit core of classes, students must take the following 8 units of classes designated below to complete a 32 unit certificate of Achievement.

**Program Student Learning Outcomes**  
A. Assess family strengths, needs and risk factors related to child and family health, mental health and development.  
B. Evaluate procedures for referrals to community resources with consideration for the diverse linguistic and cultural experiences of families.  
C. Advocate in the family and in the community for awareness of risk, resiliency and preventive factors.

<table>
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<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLDV-01</td>
<td>Child Growth and Development</td>
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<td>Child, Family and Community</td>
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<td>CLDV-03</td>
<td>Principles and Practices of Teaching Young Children</td>
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<td>CLDV-04</td>
<td>Observation and Assessment</td>
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<td>Introduction to Curriculum for the Young Child</td>
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<td>CRIM-57</td>
<td>Child Abuse &amp; Neglect</td>
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</tbody>
</table>

### CERTIFICATE (12/07)
#### Child Development: Infant/Toddler Care Specialization (13025.CT)

In addition to the 24 unit core of classes, students must take the following 8 units of classes designated below to complete a 32 unit certificate of Achievement.

**Program Student Learning Outcomes**  
A. Distinguish and apply infant/toddler caregiving principles and infant/toddler education practices.  
B. Design environments and curriculum for infant/toddler caregiving settings (including inclusive care) that support learning and building strong, positive and respectful relationships with children and families.  
C. Distinguish the professional practices of adults and staff in infant/toddler caregiving settings.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLDV-01</td>
<td>Child Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>CLDV-02</td>
<td>Child, Family and Community</td>
<td>3</td>
</tr>
<tr>
<td>CLDV-03</td>
<td>Principles and Practices of Teaching Young Children</td>
<td>3</td>
</tr>
<tr>
<td>CLDV-04</td>
<td>Observation and Assessment</td>
<td>3</td>
</tr>
<tr>
<td>CLDV-05</td>
<td>Health, Safety and Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>CLDV-06</td>
<td>Teaching in a Diverse Society</td>
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</tr>
<tr>
<td>CLDV-07</td>
<td>Introduction to Curriculum for the Young Child</td>
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</tr>
<tr>
<td>CLDV-07L</td>
<td>Practicum</td>
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<tr>
<td>CRIM-33</td>
<td>Violence in the Family</td>
<td>1</td>
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<tr>
<td>CRIM-35</td>
<td>Infant/Toddler Curriculum</td>
<td>2</td>
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<tr>
<td>CRIM-35L</td>
<td>Infant and Toddler Practicum</td>
<td>2</td>
</tr>
<tr>
<td>CRIM-37</td>
<td>Supervising Adults in ECE Settings</td>
<td>2</td>
</tr>
</tbody>
</table>

### CERTIFICATE (12/07)
#### Child Development: Families In Crisis Specialization (13020.CT)

In addition to the 24 unit core of classes, students must take the following 8 units of classes designated below to complete a 32 unit certificate of Achievement.

**Program Student Learning Outcomes**  
A. Assess family strengths, needs and risk factors related to child and family health, mental health and development.  
B. Evaluate procedures for referrals to community resources with consideration for the diverse linguistic and cultural experiences of families.  
C. Advocate in the family and in the community for awareness of risk, resiliency and preventive factors.

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLDV-01</td>
<td>Child Growth and Development</td>
<td>3</td>
</tr>
<tr>
<td>CLDV-02</td>
<td>Child, Family and Community</td>
<td>3</td>
</tr>
<tr>
<td>CLDV-03</td>
<td>Principles and Practices of Teaching Young Children</td>
<td>3</td>
</tr>
<tr>
<td>CLDV-04</td>
<td>Observation and Assessment</td>
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</tr>
<tr>
<td>CLDV-05</td>
<td>Health, Safety and Nutrition</td>
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<tr>
<td>CLDV-06</td>
<td>Teaching in a Diverse Society</td>
<td>3</td>
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<tr>
<td>CLDV-07</td>
<td>Introduction to Curriculum for the Young Child</td>
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<tr>
<td>CLDV-07L</td>
<td>Practicum</td>
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<td>CRIM-33</td>
<td>Violence in the Family</td>
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<td>CRIM-37</td>
<td>Supervising Adults in ECE Settings</td>
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<tr>
<td>CRIM-54</td>
<td>Sexual Development of Young Children</td>
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</tr>
<tr>
<td>CRIM-57</td>
<td>Child Abuse &amp; Neglect</td>
<td>1</td>
</tr>
</tbody>
</table>

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- Child Development - 99
CERTIFICATE (12/07)
Child Development: School-Age Care
Specialization (13030.CT)

In addition to the 24 unit core of classes, students must take the following
8 units of classes designated below to complete a 32 unit certificate of
Achievement.

Program Student Learning Outcomes
A. Design and analyze theme based activities for children in grades
K-8, recognize the curriculum implications for behavior management,
including the indoor and outdoor environment, and apply guidance
techniques for school-age children.
B. Distinguish characteristics of the school-age care profession and
professional.
C. Self-assess strengths and weaknesses of a school-age care provider,
and understand the role in partnerships with the community and
families of school-age children.
D. Determine current issues facing school-age children and apply
school-age theories to school-age development, including physical,
cognitive, and psychosocial development, and observe children in
three age groups, 5-7, 8-10, and 11-13 years old.

Core: Units
CLDV-01 Child Growth and Development ...........................................3
CLDV-02 Child, Family and Community ............................................3
CLDV-03 Principles and Practices of Teaching Young
Children.................................................................3
CLDV-04 Observation and Assessment.............................................3
CLDV-05 Health, Safety and Nutrition ..............................................3
CLDV-06 Teaching in a Diverse Society............................................3
CLDV-07 Introduction to Curriculum for the Young Child.................3
CLDV-07L Practicum ..............................................................3
School-Age Care option:
CLDV-30D School-Age Curriculum ..................................................2
CLDV-37 Supervising Adults in ECE Settings .................................2
CLDV-56 School-Age Development ..............................................2
CLDV-56L School-Age Development Lab ........................................2

32

CHILD DEVELOPMENT (CLDV)

CLDV-01 CHILD GROWTH AND DEVELOPMENT
(CSU breadth area E) (IGETC area 4G)
3 units: 3 hours lecture.
Prerequisite: ENGL-85.
This introductory course examines the major physical, psychosocial, and
teaching strategies in supporting physical, social, creative and intellectual
cognitive/language developmental milestones for children, both typical and
factors. While studying developmental theory and investigative research
atypical, from conception through adolescence. There will be an emphasis
methodologies, students will observe children, evaluate individual
on interactions between maturational processes and environmental
differences and analyze characteristics of development at various stages.

(11/11)

CLDV-02 CHILD, FAMILY AND COMMUNITY
(CSU breadth area E)
3 units: 3 hours lecture.
Advisory: ENGL-01A.
This course studies the importance of the socialization of children and
how society supports and empowers families. Emphasis will include the
role of family, peers, school/child care, media, community and culture,
and the influence these socializing agents have on children from diverse
backgrounds. (4/09)

CLDV-03 PRINCIPLES AND PRACTICES OF TEACHING YOUNG
CHILDREN
3 units: 3 hours lecture.
One-way corequisite: CLDV-01.
An examination of the underlying theoretical principles of developmentally
appropriate practices applied to programs, environments, emphasizing
the role of relationships, constructive adult-child interactions, and
the key role of relationships, constructive adult-child interactions, and
teaching strategies in supporting physical, social, creative and intellectual
development for all young children. This course includes a review of
the professional practices promoting advocacy, ethics, and professional
the historical roots of early childhood programs and the evolution of the
identity. (3/12)

CLDV-04 OBSERVATION AND ASSESSMENT
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: students must have a negative result on
a TB test within the past 4 years. Prerequisite: CLDV-01. One-way
corequisite: CLDV-03. Advisory: ENGL-85.
This course focuses on strategies to obtain an authentic view of the
whole child. Observational techniques and other assessment tools will be
 limitation on enrollment: students must have a negative result on
studied, practiced and evaluated using all the domains of development.

(12/07)

CLDV-05 HEALTH, SAFETY AND NUTRITION
3 units: 3 hours lecture.
Advisory: ENGL-01A.
Introduction to the laws, regulations, standards, policies and procedures
and early childhood curriculum related to child health safety and nutrition.
The key components that ensure physical health, mental health and safety
for both children and staff will be identified along with the importance
of collaboration with families and health professionals. Focus on integrating
the concepts into everyday planning and program development. (12/11)

CLDV-06 TEACHING IN A DIVERSE SOCIETY
3 units: 3 hours lecture.
Advisory: ENGL-01A.
This course examines societal and personal attitudes, beliefs, values,
asumptions and biases about culture, language, identity, family structures,
ability, and socioeconomic status. Students will demonstrate strategies for
helping children negotiate and resolve conflicts with a focus on using an
anti-bias approach in the classroom. (10/11)
CLDV-07 INTRODUCTION TO CURRICULUM FOR THE YOUNG CHILD
3 units: 3 hours lecture.
One-way corequisite: CLDV-03. Advisory: ENGL-01A.
This course presents an overview of knowledge and skills related to providing appropriate curriculum and environments for young children from birth to age 6. Students will examine a teacher's role in supporting development and engagement for all young children. This course provides strategies for developmentally-appropriate practice based on observation and assessments across the curriculum, including 1) academic content areas, 2) play, art, and creativity, and 3) development of social-emotional, communication, and cognitive skills. (11/11)

CLDV-07L PRACTICUM
3 units: 1 hour lecture, 6 hours lab.
Limitation on enrollment: Students must provide proof of a negative result on a communicable tuberculosis examination within four years of the end date of this course. Prerequisite: CLDV-04. Advisory: ENGL-85.
This course is a demonstration of developmentally appropriate early childhood teaching competencies under guided supervision. Students will utilize practical classroom experiences to make connections between theory and practice, develop professional behaviors, and build a comprehensive understanding of children and families. Child centered, play-oriented approaches to teaching, learning, and assessment; and knowledge of curriculum content areas will be emphasized as student teachers design, implement and evaluate experiences that promote positive development and learning for all young children. (1/09)

CLDV-09 HUMAN DEVELOPMENT (Also: PSYC-09)
(CSU breadth area E)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is an introduction to the scientific study of human development from conception through death. It examines interplay of biological, psychological, social, and cultural forces on the developing human being. (3/05)

CLDV-11 INTRODUCTION TO EARLY INTERVENTION
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Students must have a negative result on a TB test within the past four years. Prerequisites: CLDV-01, CLDV-03. Advisory: ENGL-85.
This course is designed for the Early Intervention Assistant certificate. The student will study infants and toddlers with disabilities, atypical development or other special needs, both in the early intervention setting and the child care setting. The student will explore strategies and interventions used in the field of early intervention. Current theories in early intervention, early relationships, family systems, family grief, and stressors will be examined. (11/05)

CLDV-30C INFANT/TODDLER CURRICULUM
2 units: 2 hours lecture.
Advisories: CLDV-35; ENGL-85.
This course is designed to help Early Childhood Education students and practicing infant/toddler personnel provide an opportunity-rich program of interesting and age-appropriate activities for infants and toddlers. (1/05)

CLDV-30D SCHOOL-AGE CURRICULUM
2 units: 2 hours lecture.
Advisories: CLDV-01; ENGL-85.
This course is designed to help Early Childhood Education students and practicing child care professionals create developmentally appropriate curriculum ideas for children in school-age programs, ages 5-12 years old. Students will do hands-on work with materials. (12/04)

CLDV-33 WORKING EFFECTIVELY WITH FAMILIES (Also: PSYC-33 and SOC-33)
1 unit: 1 hour lecture.
Advisory: ENGL-85.
This is a course designed to teach students how to work with parents in school settings. Students will examine current ways of parent involvement, parent rights and responsibilities, and ways of keeping parents informed. (11/05)

CLDV-34A ADMINISTRATION AND SUPERVISION OF ECE PROGRAMS: LICENSING AND STAFFING
3 units: 3 hours lecture.
Advisory: ENGL-85.
This class is designed to introduce students to the basic skills necessary to become administrators in child development centers. Focus will be placed on requirements for starting a child care program, organizational development and supervision, health and safety requirements, and working with parents. (1/05)

CLDV-34B ADMINISTRATION AND SUPERVISION OF ECE PROGRAMS: MANAGING PEOPLE, TIME, AND RESOURCES
3 units: 3 hours lecture.
Advisory: ENGL-85.
This class is designed to give students an in-depth look at administration problems of child development centers. Emphasis will be placed on fiscal management policy-making, personnel management, and developing staff relationships. (1/05)

CLDV-35 INFANT AND TODDLER DEVELOPMENT
2 units: 2 hours lecture.
Advisory: ENGL-85.
This course is the study of the development of children from birth to age three. This will include growth and development, health and nutrition needs, social and emotional needs, and cognitive and language development. Focus will be on care giving, education, curriculum, and developmentally appropriate programs/environments for infants and toddlers. Adult relationships with families, parents, and staff will also be studied. (11/09)

CLDV-35L INFANT AND TODDLER PRACTICUM
2 units: 6 hours lab.
Limitation on enrollment: Students must have a negative result on a TB test within the past four years. One-way corequisite: CLDV-35.
The laboratory experience offers students the opportunity to work with infants and toddlers in programs on group and individual projects in a supervised early childhood program dealing with children from birth up to three years. (12/11)

CLDV-37 SUPERVISING ADULTS IN ECE SETTINGS
2 units: 2 hours lecture.
Advisory: ENGL-85.
This course is a study of the methods and principles of supporting and supervising adults in early childhood settings, emphasizing the role of experienced teachers who mentor new teachers. Required for entry into the Mentor Teacher program. This course also meets the Adult Supervision course requirement for the California Child Development Permit and certificates of achievement at Merced College. (2/10)

CLDV-38 CHILDREN WITH SPECIAL NEEDS
3 units: 3 hours lecture.
Advisories: CLDV-01; ENGL-85.
This course provides knowledge and skills that early childhood teachers need to serve developmentally delayed and disabled preschoolers. The focus will be on working with comprehensive family services, identification of special needs children, and the inter/multi-disciplinary approach to early intervention. (11/05)
CLDV-39 NUTRITION FOR YOUNG CHILDREN (Also: NUTR-39)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course offers a study of nutrients and their function with an emphasis on the needs of children -- birth through adolescence. Cultural and socioeconomic influences on food practices and methods of teaching good nutrition to children will be covered. Emphasis will be on improving the nutritional status of children. This course is designed for Early Childhood Education majors to fulfill state requirements for a Children’s Learning Center permit. The course is also for parents who wish to become more knowledgeable about nutrition for their children and for food service workers in child care programs. (11/06)

CLDV-51 EARLY LITERACY FOR YOUNG CHILDREN
1 unit: 1 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course gives Early Childhood Education students the basic elements of early literacy appropriate for young children. (1/05)

CLDV-54 SEXUAL DEVELOPMENT OF YOUNG CHILDREN
1 unit: 1 hour lecture.
Prerequisite: CLDV-03. Advisory: ENGL-85.
This course offers students knowledge about healthy sexual development of young children from infancy to age 12. It addresses concerns such as teaching body parts, gender roles, playing doctor, and preparing for puberty. (3/12)

CLDV-56 SCHOOL-AGE DEVELOPMENT
2 units: 2 hours lecture.
Prerequisite: CLDV-03
This introductory course on school-age development covers an overview of school-age care; the school-age professional; school-age theory and development ages 5-13; current issues facing school-age children; guidance of school-age children; regulations and program quality; and developing partnerships with communities and families. Students will participate in observations of school-age children and programs. (12/04)

CLDV-56L SCHOOL-AGE DEVELOPMENT LAB
2 units: 6 hours lab.
Limitation on Enrollment: Students must have a negative result on a TB test within the past four years. One-way corequisite: CLDV-56.
School-age programs will be studied for purposes of planning experiences which encourage physical, mental, social and emotional growth. The laboratory will consist of supervised work in a selected school-age care program and is designed to offer students continued and increased opportunities in working with children ages 5-12 years old. (12/04)

CLDV-57 CHILD ABUSE AND NEGLECT
1 unit: 1 hour lecture.
Advisory: CLDV-03, ENGL-85
This course is designed to help Child Development students and practicing child care professionals understand that the educator has a vital role in the identification, treatment, and prevention of child abuse and neglect. (11/06)

CLDV-70A-Z SPECIAL TOPICS IN CHILD DEVELOPMENT
1-3 units: 1-3 hours lecture, 0-9 hours lab.
Prerequisite/advisory: None.
This is a course designed to address special topics in Child Development to meet current needs of students. Specific classes will be offered to help them cope with the rapidly-changing environment and its effect on everyday living. (12/04)
Communication Studies
Social Sciences, Humanities, and Fine Arts

DEGREE
A.A.-T. - Communication Studies

Program Description
The Communication Studies curriculum is designed to assist students from all majors in developing communication skills. Those students interested in majoring in communication studies, with possible emphasis in public speaking, small group discussion, interpersonal communication, intercultural communication, or oral interpretation, should consult the catalog of the college to which they plan to transfer for these and other options.

Mission Statement
The mission of the Communication Studies A.A.-T degree program is to prepare students for employment and/or for the pursuit of an advanced degree in communication studies or other similar areas by educating them in the fundamental concepts, knowledge, and skills of communication.

Career Opportunities in Communication Studies
This degree prepares students for careers requiring communication skills, whether it be small group, interpersonal, public speaking, or intercultural.

DEGREE (4/11)
A.A.-T. - Communication Studies (15601.AAT)

The Associate in Arts in Communication Studies for Transfer (AA-T) is designed for students as both a terminal degree as well as for those planning on transferring to a California State University. Upon completion of the associate degree, the student is eligible for transfer with junior standing into the California State University (CSU) system. Students will be given priority consideration when applying to a particular program that is similar to the student’s community college area of emphasis.

For an Associate in Arts in Communication Studies for Transfer, students must complete 60 semester units that are eligible for transfer to the California State University with a minimum grade point average of 2.0, including both of the following:

1. Certification of the Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education-Breadth Requirements.

2. The 18 semester units from the list below.

Important Note: Students are not required to complete any additional local graduation requirements for the AA-T (e.g., PE and Computer and Information Literacy Courses.)

Program Student Learning Outcomes
A. Demonstrate proficient skills in oral, written, and visual communication.
B. Construct written and oral communications appropriate for the purpose, audience, and context.
C. Compose analytical, critical, and research-based communication in all contexts, including public speaking, oral interpretation, small group discussion, interpersonal, and intercultural interactions.

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<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tr>
<td>COMM-01</td>
<td>Fundamentals of Speech                      3</td>
</tr>
<tr>
<td>or</td>
<td>Honors Fundamentals of Speech                3</td>
</tr>
<tr>
<td>COMM-02*</td>
<td>Oral Interpretation                           3</td>
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<tr>
<td>COMM-04</td>
<td>Small Group Discussion and Communication     3</td>
</tr>
<tr>
<td>COMM-05</td>
<td>Interpersonal Communication                  3</td>
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<tr>
<td>COMM-30</td>
<td>Introduction to Intercultural Communication  3</td>
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<td>plus three units from the following electives:</td>
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<tr>
<td>ANTH-02</td>
<td>Cultural Anthropology                         3</td>
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<tr>
<td>ENGL-13</td>
<td>Critical Reasoning &amp; Writing                  3</td>
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<tr>
<td>PSYC-01A</td>
<td>Introduction to Psychology                    3</td>
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<td>SOC-01</td>
<td>Introduction to Sociology                     3</td>
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<td>Additional courses toward CSU Breadth or IGETC certification and transferable electives:</td>
<td>42</td>
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<tr>
<td>Total Units                                      60</td>
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*Offered in the spring semester only.
COMMUNICATION STUDIES (COMM)

COMM-01 FUNDAMENTALS OF SPEECH
(CSU breadth area A1)  (IGETC area 1C - CSU only)
3 units: 3 hours lecture.
Prerequisite: ENGL-85.
This course is designed to instruct students in the fundamentals of preparing and giving speeches in front of audiences. The focus will be on speeches to inform and persuade. By the end of the course, students should be speaking confidently and skillfully and should be able to transfer their understanding and skills from the classroom to “real world” situations. (10/04)

COMM-01H HONORS FUNDAMENTALS OF SPEECH
(CSU breadth area A1)  (IGETC area 1C - CSU only)
3 units: 3 hours lecture.
Limitation on enrollment: Enrollment in the Honors Program. See the college catalog for a description of admission requirements.
Prerequisite: ENGL-85.
This course is designed to increase students’ understanding and to improve their skills as public speakers, both in and outside the classroom. In order to help students become aware of and think critically about current issues, and to defend and advocate positions, the course will focus on argumentation and persuasion. (10/07)

COMM-02 ORAL INTERPRETATION (Also: ENGL-02)
3 units: 3 hours lecture.
Prerequisite: ENGL-85.
This course is designed to help students understand, appreciate, and convey the power of the written word. A variety of writings will be analyzed in their rhetorical, historical, and cultural contexts and be brought to life through performance. (2/08)

COMM-04 SMALL GROUP DISCUSSION AND PROBLEM SOLVING
(CSU breadth area A1)  (IGETC area 1C - CSU only)
3 units: 3 hours lecture.
Prerequisite: ENGL-85.
This is a course designed to help students develop critical thinking skills for communication and working together on small group tasks. Emphasis is placed on problem solving, reasoning, conflict resolution, and leadership. (10/04)

COMM-05 INTERPERSONAL COMMUNICATION
(CSU breadth area A1)
3 units: 3 hours lecture.
Prerequisite: ENGL-85.
The focus of this course is to examine successful communication in interpersonal relationships. Communication theory and skills will be investigated in order to help students interact more effectively in personal and professional relationships. Specific skills that will be examined for usefulness and appropriateness are self-concept, perception, verbal and nonverbal communication, culture, and conflict resolution. (3/07)

COMM-30 INTRODUCTION TO INTERCULTURAL COMMUNICATION
(CSU breadth area D7)  (IGETC area 4G) [CILC areas D]
3 units: 3 hours lecture.
Prerequisite: ENGL-85.
This course is designed to examine the basic concepts, principles, and their application to communication between persons from different minority, ethnic, and co-cultural backgrounds within the United States and in the international arena through the scope of interpersonal communication skills. This class will assist in the understanding and evaluation of barriers to communicating with people from other cultures, which include ethnocentrism, prejudice, and lack of awareness. (10/07)

COMM-50 ACCENT REDUCTION
3 units: 3 hours lecture.
Advisories: ENGL-81, ENGL-84.
This course is for non-native speakers of English who speak English well, but would like to reduce their accent. The course emphasizes stress, rhythm and intonation patterns that enable students to be understood by native speakers. It also addresses problematic consonant and vowel sounds. Use of the language lab may be required. This course may be repeated once. (12/03)
Computer Studies
Allied Health, Business, and Public Safety

DEGREES
A.S. - Computer Science
A.S. - Management Information Systems

Program Description
The Associate in Science Degree in Management Information Systems is designed for students pursuing degrees in Business Administration, Computer Information Systems, or Management Information Systems. Students should determine what other lower division requirements are required by the institution to which they intend to transfer.

The Associate in Science Degree in Computer Science is designed for students pursuing degrees in Computer Science or Computer Engineering.

Career Opportunities
Over the past two decades, there has been a sharp rise in the use of computers and information technology in every sector of our economy. The overall demand for computer professionals (systems analysts, programmers, and computer networking technicians) continues to expand, increasing every year with the future seemingly limitless. Many professions demand an understanding of information technology beyond computer literacy. This anticipated growth, according to the Bureau of Labor Statistics, surpasses all other occupations.

Graduates of the computer science and MIS Programs often transfer to a four-year college earning a bachelor's degree in business administration, management information systems, computer science, computer engineering, software engineering, business management, accounting, statistics, mathematics, physics or electronics.

DEGREE (2/11)
A.S. - Computer Science (07200.AS)

For an Associate in Science Degree in Computer Science, students must meet the graduation requirements and complete the following required courses.

Program Student Learning Outcomes
A. Understand and articulate the ethical, mathematical, and scientific concepts that underlie computer science.
B. Apply the cognitive method to analyze, synthesize and evaluate academic and real life problems.
C. Employ industry standard technologies that will prepare them to enter the workforce.
D. Develop the knowledge and skills to remain current in the field and engage in lifelong learning.

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>CPSC-01</td>
<td>Introduction to Management Information Systems</td>
<td>4</td>
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<tr>
<td>CPSC-06</td>
<td>Programming Concepts and Methodology I</td>
<td>3</td>
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<tr>
<td>CPSC-39</td>
<td>Programming Concepts and Methodology II</td>
<td>4</td>
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<td>MATH-04A</td>
<td>Calculus I</td>
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<td>MATH-04B</td>
<td>Calculus II</td>
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<td>MATH-14</td>
<td>C++ Programming</td>
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<td>CHEM-04A</td>
<td>General Chemistry</td>
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<td>CHEM-04B</td>
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<td>CPSC-05A</td>
<td>Visual Basic Programming</td>
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<td>MATH-04C</td>
<td>Multivariable Calculus</td>
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<td>MATH-06</td>
<td>Elementary Differential Equations</td>
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<td>Linear Algebra</td>
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<td>Plus a minimum of 9 units from the following courses:</td>
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<td>CHEM-04B</td>
<td>General Chemistry</td>
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</tr>
<tr>
<td>CPSC-05A</td>
<td>Visual Basic Programming</td>
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<tr>
<td>MATH-04C</td>
<td>Multivariable Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH-06</td>
<td>Elementary Differential Equations</td>
<td>3</td>
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<tr>
<td>MATH-08</td>
<td>Linear Algebra</td>
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<td>MATH-10</td>
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</table>

DEGREE (2/09)
A.S. - Management Information Systems (07300.AS)

For an Associate in Science Degree in Management Information Systems, students must meet the graduation requirements and complete the following required courses.

Program Student Learning Outcomes
A. Students will understand the mathematical and scientific concepts that underlie management information systems.
B. Students will apply the cognitive method to analyze, synthesize and evaluate academic and real life problems relating to business and management.
C. Students will assess requirements of an information system.
D. Students will demonstrate an appreciation for lifelong learning.

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<thead>
<tr>
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<th>Units</th>
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<td>Managerial Accounting</td>
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<td>BUS-18A</td>
<td>Business Law</td>
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<td>CPSC-05A</td>
<td>Visual Basic Programming</td>
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</tr>
<tr>
<td>CPSC-06</td>
<td>Programming Concepts and Methodology I</td>
<td>3</td>
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<tr>
<td>ECON-01A</td>
<td>Introduction to Macroeconomics</td>
<td>3</td>
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Computer Studies (CPSC)

**CPSC-01** **INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS**

[CYLC areas A,B,C,D,E,F]

3 units: 3 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-C.

This is an entry-level course for business majors, students majoring in Computer Science or Management Information Systems, or anyone interested in the fundamentals of computer information systems and gaining an understanding of fundamental programming concepts. Algorithm design, logic diagrams, coding, and debugging are introduced using a third generation programming language. (12/08)

**CPSC-05A** **VISUAL BASIC PROGRAMMING**

3 units: 2 hours lecture, 3 hours lab.
Prerequisite: CPSC-01.

An introduction to programming and software development using the popular Visual Studio IDE, and the Visual BASIC programming language. Software applications will be created using the Visual Studio development environment that will include the standard Windows interface, design of the graphical user interface as well as concepts of programming, problem solving, and programming logic. (12/08)

**CPSC-05B** **C# PROGRAMMING**

3 units: 2 hours lecture, 3 hours lab.
Prerequisite: CPSC-01.

An introduction to programming and software development using the popular Visual Studio IDE, and the C# programming language. Software applications will be created using the Visual Studio development environment that will include the standard Windows interface, design of the graphical user interface as well as concepts of programming, problem solving, and programming logic. (12/08)

**CPSC-06** **PROGRAMMING CONCEPTS AND METHODOLOGY I**

3 units: 2 hours lecture, 3 hours lab.
Prerequisite: MATH-C. Advisories: CPSC-01; ENGL-01A.

This course introduces the discipline of computer science using a high-level language, and provides an overview of computer organization and an introduction to software engineering. Topics include methodologies for program design, development, style, testing, and documentation, algorithms, control structures, sub-programs, and elementary data structures. These skills will be used to solve a variety of application problems. (10/11)

**CPSC-12** **FORTRAN PROGRAMMING** (Also: ENGR-12 and MATH-12)

3 units: 2 hours lecture, 3 hours lab.
Prerequisite: MATH-02, or MATH-25 and MATH-26. Advisory: ENGL-85.

This course teaches students to use the FORTRAN programming language to solve problems in a wide variety of areas. Program design, problem-solving, and debugging techniques are emphasized throughout the course. (1/07)

**CPSC-24** **INTRODUCTION TO COMPUTER STUDIES AND TECHNOLOGY**

[CYLC areas A,B,C,D,E,F]

3 units: 3 hours lecture.
Advisories: MATH-80 or MATH-83; ENGL-85.

This entry-level, theory-dominant course is for non-computer majors who wish to become computer and information technology literate. This course explores computer and software use in the workplace with emphasis on business and industrial situations, education, science, and within the humanities. Computer applications including word-processing, spreadsheets, databases, and presentation managers will be covered. Students will discuss the social and legal implications of these uses. This course is also designed, whenever possible, to meet many of the provisions found in California State Technology Requirements Preliminary and Professional Clear Credential Candidates Required Assignments, such as e-mail use, e-mail with attachment, news group use, chat room location and use, virtual bulletin usage, the creation of a WEB page, the creation and use of at least one computer program, and perform research using...
one or more general and technical databases on the Internet following a prescribed methodology. (4/10)

**CPSC-30 COMPUTER APPLICATIONS**

[CILC areas A,B,C,D,E,F]

3 units: 2 hours lecture, 3 hours lab. 
Advisories: AOM-50A or AOM-50B (keyboard at a minimum of 20 GWAM); ENGL-81, ENGL-84; MATH-80.

This course is intended for students seeking an introduction to application software used in the workplace with emphasis on business situations. Computer applications including word-processing, spreadsheets, databases, and presentation managers will be covered. Also included will be accessing information through the intranet, Internet and World Wide Web and telecommunications. This course meets the Computer and Information Literacy Competency (CILC) the A-F requirements for graduation. (See the current schedule or catalog.) (2/07)

**CPSC-31A BEGINNING WORD PROCESSING**

[CILC areas A,B,C,D]

1 unit: 1 hour lecture. 
Advisories: AOM-50B or type at least 25 WPM; ENGL-85.

This course prepares students to begin to work with word processing in a career setting or for personal use. Students develop introductory skills using a current word processing application and explore the essential features of a current operating system and browser. Students also develop an understanding of fundamental computer hardware and software concepts. (2/09)

**CPSC-31B INTERMEDIATE WORD PROCESSING**

1 unit: 1 hour lecture. 
Advisories: AOM-50B, ENGL-85; or CPSC-30; or CPSC-31A; or type by touch and have a basic understanding of word processing.

This course enhances a student’s knowledge in a current version of word processing in order to use the skills in a student, in a career setting, or for personal use. Students develop competency and efficiency in using word processing. Students will learn how to format a research paper using MLA, APA, and Chicago writing styles. (2/09)

**CPSC-32A BEGINNING SPREADSHEET**

[CILC areas B,C]

1 unit: 1 hour lecture. 
Advisories: AOM-50B or type at least 25 WPM; ENGL-85; MATH-80.

This course prepares students to begin to work with spreadsheets in a career setting or for personal use. Students develop introductory skills using a current spreadsheet application and explore the essential features of a current operating system and browser. (2/09)

**CPSC-33A BEGINNING DATABASES**

[CILC areas B,C,D,E,F]

1 unit: 1 hour lecture. 
Advisories: AOM-50B or type at least 25 WPM; ENGL-85; MATH-80.

This course prepares students to begin work with databases in a career setting or for personal use. Students develop introductory skills using a current database application and explore the essential features of a current operating system and browser. (2/09)

**CPSC-39 PROGRAMMING CONCEPTS AND METHODOLOGY II**

4 units: 3 hours lecture, 3 hours lab. 
Prerequisites: CPSC-06 or ENGR-14 or MATH-14.

This course is a continuation course in Computer Science which introduces further aspects of software design and implementation. Abstract data types, fundamental data structures and associated algorithms: lists, stacks, queues and trees. Students will be expected to design, implement, test and analyze a number of programs. (10/11)

**CPSC-40A NETWORKING FOR HOME AND SMALL BUSINESSES**

(Also: ELCT-40A) 
[CILC areas A,C,E] 
3 units: 2 hours lecture, 3 hours lab. 
Advisories: ENGL-81, ENGL-84; MATH-80.

This curriculum helps students develop the skills needed to obtain entry-level networking jobs. It provides a hands-on approach to networking education that allows students to gain practical experience working on PC’s, their components and applications. Students complete instructional labs to understand the general theory needed to build networks and connect them to the internet. Basic security and wireless concepts are covered. It is for students with basic PC usage skills. (1/09)

**CPSC-40B WORKING AT A SMALL-TO-MEDIUM BUSINESS OR ISP**

(Also: ELCT-40B) 
[CILC areas A,C,E] 
3 units: 2 hours lecture, 3 hours lab. 
Prerequisite: CPSC-40A.

This course prepares students for jobs as network technicians. It also helps students develop additional skills required for computer technicians and help desk technicians. It provides a basic overview of routing and remote access, addressing, and security. It also familiarizes students with servers that provide e-mail services, Web space, and authenticated access. Students also learn about soft skills required for help desk and customer service positions. Network monitoring and basic troubleshooting skills are taught in context. (1/09)

**CPSC-40C ROUTING AND SWITCHING IN THE ENTERPRISE**

(Also:ELCT-40C) 
3 units: 2 hours lecture, 3 hours lab. 
Prerequisite: CPSC-40B.

This course familiarizes students with the equipment applications and protocols installed in enterprise networks, with a focus on switched networks, IP Telephony requirements, and security. It also introduces advanced routing protocols such as Enhanced Interior Gateway Routing Protocol (EIGRP) and Open Shortest Path First (OSPF) Protocol. Hands-on exercises include configuration, installation, and troubleshooting. (1/09)

**CPSC-40D DESIGNING AND SUPPORTING COMPUTER NETWORKS**

(Also: ELCT-40D) 
3 units: 2 hours lecture, 3 hours lab. 
Prerequisite: CPSC-40C.

This course introduces students to network design processes using two examples; a large stadium enterprise network and a medium-sized film company network. Students follow a standard design process to expand a company network. Students also learn about soft skills required for help desk and customer service positions. It is for students with basic PC usage skills. (1/09)

**CPSC-49A-ZZ SPECIAL TOPICS IN COMPUTER STUDIES**

0.5 - 3 units: 0.5 - 3 hours lecture, 0 - 6 hours lab. 
Advisories: ENGL-81, ENGL-84; MATH-80.

This series of courses is designed to provide opportunities for students to further develop their computing skills. (4/05)
Cooperative Education

English, Basic Skills and Child Development

**COOPERATIVE EDUCATION (COOP)**

**COOP-41A COOPERATIVE EDUCATION IN (SUBJECT)**

- 1-4 units: 1-4 hours weekly.
- Advisory: ENGL-85.

Cooperative work experience education is a process of education that combines work experience with regular college instruction as an integral part of the community college curriculum. Cooperative Education allows students the opportunity to benefit from practical application in a job setting within their major area, or will allow students to sample an experience in a career field the student may be considering. A student may enroll in Cooperative Education for a maximum of four semesters, and no more than 16 units may be earned at Merced College. Seventy-five hours of work experience (or 60 hours volunteer work) equal one unit of college credit. Cooperative education units are offered in many areas. The number of units (1, 2, 3, or 4) the student will be enrolled in will be determined by the number of hours the student will work during the semester. In order to participate in the Cooperative Education Program, a student must (a) have on-the-job experience that contributes to occupational or educational goals; (b) be enrolled in Cooperative Education; (c) have the approval of the Cooperative Education Coordinator; and (d) have the cooperation of the employer in including new or expanded responsibilities or learning opportunities on the job for which the student is enrolled in Cooperative Education. (10/07)

**COOP-41B COOPERATIVE EDUCATION IN (SUBJECT)**

- 1-4 units: 1-4 hours weekly.
- Prerequisite: COOP-41A. Advisory: ENGL-85.

See COOP-41A above. (10/07)

**COOP-41C COOPERATIVE EDUCATION IN (SUBJECT)**

- 1-4 units: 1-4 hours weekly.
- Prerequisite: COOP-41B. Advisory: ENGL-85.

See COOP-41A above. (10/07)

**COOP-41D COOPERATIVE EDUCATION IN (SUBJECT)**

- 1-4 units: 1-4 hours weekly.
- Prerequisite: COOP-41C. Advisory: ENGL-85.

See COOP-41A above. (10/07)
**Corrections**

**Allied Health, Business, and Public Safety**

**DEGREE**
A.A. - Corrections

**CERTIFICATE**
Corrections

**Gainful Employment Disclosure Metrics**
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:

https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

**Program Description**
The Corrections program is multifaceted to serve the educational needs of both the pre-service and correctional professional. The program also provides educational opportunities for individuals interested in learning about the correctional aspects of the criminal justice system. In addition to an Associate’s degree and a Certificate of Achievement, an Adult Correctional Officer Core Academy, which meets the requirements of the State of California Board of Corrections, and Standards and Training for Corrections, is offered to qualified individuals.

**Career Opportunities**
The demand for qualified men and women in the corrections field is present today more than ever before. Today’s practitioners need to be able to deal with traditional functions and with the complex social issues of modern society. Professional opportunities in corrections and related fields for men and women may be found on the federal, state, local, and private levels. Each agency provides unique career opportunities for the trained recruit or advancing professional.

**Highlights**
Understanding correctional processes and inmate rights
Acquiring knowledge and skills for professional practice
Opportunity for qualified students to tour local institutions

**Note to Transfer Students**
Many four year institutions do not offer a specialized major in this field. Seek assistance of a guidance counselor if you plan to transfer.

**DEGREE**
A.A. - Corrections (21100.AA)

For an Associate in Arts Degree in Corrections, students must complete the graduation requirements and the course work listed below with a 2.0 GPA or higher in each class.

**Program Student Learning Outcomes**
A. Demonstrate and understanding of the fundamental principles, laws, and processes related to the American judicial system and the constitutional rights of inmates.
B. Demonstrate an understanding of the issues and procedures related to safety and security management in institutions.
C. Demonstrate an understanding of the nature and role of custodial care of the correctional client.
D. Demonstrate an understanding of the basic structure and functions of correctional institutions.
E. Demonstrate critical thinking skills, effective written and oral communication skills.

**Units**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>Introduction to Corrections</td>
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<td>CORR-42</td>
<td>Control and Supervision in Corrections</td>
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<td>CORR-43</td>
<td>Correctional Interviewing</td>
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<td>CORR-30</td>
<td>Probation and Parole</td>
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<td>CORR-32</td>
<td>Adult Correctional Officer Core Academy</td>
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<td>CRIM-06</td>
<td>Introduction to Evidence</td>
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<td>CRIM-08</td>
<td>Introduction to Investigation</td>
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<td>CRIM-30</td>
<td>Juvenile Procedures</td>
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<td>CRIM-39</td>
<td>Police Tactics</td>
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Total: 24
## CERTIFICATE (21100.CT) Corrections

A Certificate of Achievement in Corrections can be obtained by completion of the following classes with a 2.0 GPA or higher.

### Program Student Learning Outcomes

A. Demonstrate an understanding of the fundamental principles, laws, and processes related to the American judicial system and the constitutional rights of inmates.

B. Demonstrate an understanding of the issues and procedures related to safety and security management in institutions.

C. Demonstrate an understanding of the nature and role of custodial care of the correctional client.

D. Demonstrate an understanding of the basic structure and functions of correctional institutions.

E. Demonstrate critical thinking skills, effective written and oral communication skills.

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<tr>
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<td>CRIM-39</td>
<td>Police Tactics</td>
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### ACADEMY

#### Adult Correctional Officer Core Academy

Program Student Learning Outcomes

Upon completion of the Adult Correctional Officer Core Academy the student will be able to:

A. At a basic level demonstrate an understanding of the fundamental principles, laws, and processes related to the American judicial system and the constitutional rights of inmates.

B. Demonstrate an understanding of the issues and procedures related to safety and security management in institutions.

C. Demonstrate an understanding of the nature and role of custodial care of the correctional client.

D. Demonstrate an understanding of the basic structure and functions of adult local correctional institutions.

E. Demonstrate critical thinking skills, effective written and oral communication skills.

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<td>Family Violence</td>
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### Recommended Sequence: Certificate - Corrections (21100.CT)

#### Fall 1

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### Spring 1

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### Recommended Sequence: A.A. - Corrections (21100.AA)

#### Fall 1

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<td>Control and Supervision in Corrections</td>
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<tr>
<td>CORR-43</td>
<td>Correctional Interviewing and Counseling</td>
<td>3</td>
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<tr>
<td>CORR-44</td>
<td>Legal Aspects of Corrections</td>
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<th>Suggested electives:</th>
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<tr>
<td>CORR-32</td>
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<td>CRIM-08</td>
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<td>CRIM-33</td>
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<td>CRIM-37</td>
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<td>CRIM-39</td>
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CORRECTIONS (CORR)

CORR-01 INTRODUCTION TO CORRECTIONS
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is designed to provide the student with an overview of the history and trends of adult and juvenile corrections, including probation and parole. It will focus on the legal issues, specific laws, and general operation of correctional institutions. The relationship between corrections and other components of the judicial system will also be examined. (5/09)

CORR-04 CONCEPTS OF CRIMINAL LAW FOR CORRECTIONS
3 units: 3 hours lecture.
Advisories: ENGL-85; CORR-01 or current employment as a correctional officer.
This course covers historical development, philosophy, and practice of law and Constitutional provisions: definitions and classifications of crime, legal research, study of case law, methodology, and concepts of law as a social force. Law as it affects the correctional component of the justice system will be clearly identified. (5/09)

CORR-30 PROBATION AND PAROLE
3 units: 3 hours lecture.
Advisories: CORR-01; CRIM-01 or CRIM-02.
This course encompasses the background, structure, and procedures of probation, parole, and the criminal court process. (5/03)

CORR-32 ADULT CORRECTIONAL OFFICER CORE ACADEMY
6 units: 4 hours lecture, 6 hours lab.
Limitation on Enrollment: Students must be cleared by the California Department of Justice (DOJ) to participate. DOJ clearance is evaluated through the LiveScan fingerprint process. This clearance will reveal a qualifying/disqualifying criminal history background; absence of medical conditions that would prevent strenuous physical training, and arrest control methods training. Physicians’ clearance indicating good physical health must be presented to instructor at first class meeting. Student must posses a valid California Driver License. Advisories: ENGL-85.
This course meets the requirements of the State of California, Board of Corrections, and Standards and Training for Corrections (STC). It covers the specific performance and instructional objectives for local and county jails, probation institutions, and community correctional facilities, it covers topics such as: booking, receiving, and releasing of inmates; supervising inmates; medical and psychological services; hygiene; verbal communication; fire and life safety; defensive tactics; cell extractions; restraint devices; record keeping and report writing; searching and transporting of inmates. (10/06)

CORR-41 CORRECTIONAL WRITING
3 units: 3 hours lecture.
Prerequisite: CORR-04. Advisory: ENGL-85
This is an introductory course emphasizing the practical aspects of gathering, organizing, and preparing written reports for correctional activities on local, state, and federal levels. It will cover the techniques of communicating facts, information, and ideas effectively in a simple, clear and logical manner for various types of criminal justice system reports, letters, memoranda, directives, and administrative reports. Students will gain practical experience in note-taking, report writing, and presenting testimony in court. (12/09)

CORR-42 CONTROL & SUPERVISION IN CORRECTIONS
3 units: 3 hours lecture.
Advisories: CORR-01 or CRIM-01 or CRIM-02.
This course offers an overview of supervision of inmates in the local, state, and federal correctional institutions. The issues of control in a continuum from institutional daily living through crisis situations will be introduced and discussed. The course will emphasize the role played by the offender and the correctional worker. Topics will include inmate subculture, violence, and effects of crowding on inmates and staff, and coping techniques for correctional officers in a hostile prison environment. The causes and effects of abusive tactics will also be discussed. (12/09)

CORR-43 CORRECTIONAL INTERVIEWING AND COUNSELING
3 units: 3 hours lecture.
Advisories: Prior completion or concurrent enrollment in CORR-01. This class provides an overview of the techniques available to practitioners in Corrections in counseling and interviewing. The student will learn the use of appropriate techniques and theories in confidence building which may be used by the correctional employee in client interviews and counseling. This is a basic course for students planning to enter or who are already employed within the Correctional Science field. (12/09)

CORR-44 LEGAL ASPECTS OF CORRECTIONS
3 units: 3 hours lecture.
One-way corequisite: CORR-01. Advisories: ENGL-85; or current employment as a correctional officer.
This course provides students with an awareness of the historical framework, concepts, and precedents that guide correctional practice. Course material will broaden the individual’s perspective of the corrections environment, the civil rights of prisoners, responsibilities, and liabilities of corrections officials. (2/10)

CORR-49A-ZZ SPECIAL TOPICS IN CORRECTIONS
0.5 - 7 units: 0.5 - 7 hours lecture.
Advisory: ENGL-85.
This is a course designed to address special topics in corrections to meet the current needs of students. The course will allow pre-service and in-service personnel to maintain the most current training standards in the field. (5/09)
Criminal Justice
Allied Health, Business, and Public Safety

DEGREE
A.S.-T. - Administration of Justice
A.A. - Criminal Justice

CERTIFICATE
Criminal Justice

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/View.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Criminal Justice program is multifaceted and serves the educational needs of both pre-service and law enforcement professionals as well as individuals interested in learning about the field. The program leads to an Associate’s Degree in Criminal Justice, and transfer to Baccalaureate degree programs and or a Certificate of Achievement. Additionally, the first two of three modules of the Modular Police Academy are offered to qualified students. These courses meet the State of California, Commission on Peace Officers Standards and Training (POST) requirements.

Career Opportunities
The demand for qualified men and women in the criminal justice field is present today more than ever before. Today’s practitioners need to be able to deal with traditional law enforcement functions, and the complex social issues of our diverse society. Professional opportunities in law enforcement and related fields may be found on the federal, state, and local level as well as in the private sector and industry. Each agency or private entity provides unique career opportunities for the trained recruit. Many related career fields such as criminologist, fingerprint analyst, communications specialists, crime analyst, researcher, and educator are available.

DEGREE (12/11)
A.S.-T. - Administration of Justice (21075.AST)

The Associate in Science in Administration of Justice for Transfer degree is designed for students planning on transferring to a California State University. Upon completion of the transfer associate degree, the student is eligible for transfer with junior standing into the California State University (CSU) system. Students will be given priority consideration when applying to a particular program that is similar to the student’s community college area of emphasis.

For an Associate in Science in Administration of Justice for Transfer (A.S.-T), students must complete 60 semester units that are eligible for transfer to the California State University with a minimum grade point average of 2.0, including both of the following:
(1) Certification of the Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education-Breadth Requirements.
(2) A minimum of 18 semester units from the list below with a 2.0 grade point in each class.

Important note: Students are not required to complete any additional local graduation requirements for the AS-T (e.g., PE and Computer and Information Literacy courses).

Career Opportunities in CRIMINOLOGY
This degree is designed for students who plan to transfer to a four year college or university, but also prepares students for careers in a variety of fields that require an understanding of criminal justice.

Advanced degree or professional certificate such as a baccalaureate degree will prepare students for careers in administration of justice such as police officers, sheriff’s deputies, communications specialists, crime scene specialists, private security, criminologist, and researcher.

Program Student Learning Outcomes
A. Demonstrate an understanding of the fundamental principles, laws, processes, and individual constitutional rights related to the judicial system in the United States and potential conflict between diverse communities that are created.
B. Compare and evaluate diverse and competing arguments currently and historically in the justice system and interfacing components.
C. Identify and communicate criminal justice concepts and principals effectively verbally and in writing.
D. Analyze critically the social, political, economic, and cultural context within the criminal justice system functions and the responsibilities of the agencies and individual practitioners with multicultural communities.

REQUIRED CORE: ..........................................................Units
CRIM-02 Introduction to Criminal Justice .......................3
CRIM-04 Criminal Law ..................................................3

LIST A
Select two courses from List A...........................................6
CRIM-03 Criminal Procedures (3)
DEGREE TOTAL: 60 units

Program Student Learning Outcomes
A. Demonstrate at the entry level an understanding of the fundamental principles, laws, and processes related to the American judicial system and individual constitutional rights.
B. Recognize at the entry level the social, political, economic, and cultural context within the criminal justice system and responsibilities to the community.
C. Demonstrate at the entry level critical thinking skills, the ability to analyze and solve problems using logical and creative methods.
D. Demonstrate at the entry level effective written, verbal and nonverbal communication skills.

DEGREE (5/08)
A.A. - Criminal Justice (21150.AA)

For an Associate in Arts Degree in Criminal Justice, students must complete the graduation requirements and the 24-unit curriculum listed below. These courses must be in addition to the basic graduation requirements, and a 2.0 GPA or higher must be earned in each class.

Program Student Learning Outcomes
A. Demonstrate at the entry level an understanding of the fundamental principles, laws, and processes related to the American judicial system and individual constitutional rights.
B. Recognize at the entry level the social, political, economic, and cultural context within the criminal justice system and responsibilities to the community.
C. Demonstrate at the entry level critical thinking skills, the ability to analyze and solve problems using logical and creative methods.
D. Demonstrate at the entry level effective written, verbal and nonverbal communication skills.

Units

CRIM-01 Criminology .......................................................... 3
or
CRIM-02 Introduction to Criminal Justice ......................... 3

CRIM-03 Criminal Procedures ............................................. 3
CRIM-04 Criminal Law ...................................................... 3
CRIM-05 Community and Human Relations ......................... 3
CRIM-06 Introduction to Evidence ..................................... 3
CRIM-10 Writing for Criminal Justice................................. 3
CRIM-37 Communication and Ethics in Law Enforcement ....... 3

CRIM-03 Criminal Procedures ............................................. 3
CRIM-04 Criminal Law ...................................................... 3
CRIM-05 Community and Human Relations ......................... 3
CRIM-06 Introduction to Evidence ..................................... 3
CRIM-10 Writing for Criminal Justice................................. 3
CRIM-37 Communication and Ethics in Law Enforcement ....... 3

CRIM-01 Criminology .......................................................... 3
or
CRIM-02 Introduction to Criminal Justice ......................... 3

CRIM-08 Introduction to Investigation ................................ 3
CRIM-33 Violence in the Family ....................................... 3
CRIM-35 Narcotics ............................................................. 3
CRIM-39 Police Tactics ...................................................... 3
CRIM-42A 832 PC Arrest Methods ..................................... 1.5
CRIM-42B 832 PC Firearms ................................................. 1
CRIM-42C Reserve Officer Module Level 3 ......................... 7
CRIM-42D Reserve Officer Module Level 2 ......................... 10
CRIM-49A-ZZ Special Problems in Criminal Justice ............. ½ - 3
CORR-30 Probation and Parole ........................................... 3

CRIM-01 Criminology .......................................................... 3
or
CRIM-02 Introduction to Criminal Justice ......................... 3

CRIM-08 Introduction to Investigation ................................ 3
CRIM-33 Violence in the Family ....................................... 3
CRIM-35 Narcotics ............................................................. 3
CRIM-39 Police Tactics ...................................................... 3
CRIM-42A 832 PC Arrest Methods ..................................... 1.5
CRIM-42B 832 PC Firearms ................................................. 1
CRIM-42C Reserve Officer Module Level 3 ......................... 7

CERTIFICATE
Criminal Justice (21150.CT)

A Certificate of Achievement in Criminal Justice can be obtained by completion of the following two classes with a 2.0 GPA or higher in each class taken.

Program Student Learning Outcomes
A. Demonstrate at the entry level an understanding of the fundamental principles, laws, and processes related to the American judicial system and individual constitutional rights.
B. Recognize at the entry level the social, political, economic, and cultural context within the criminal justice system and responsibilities to the community.
C. Demonstrate at the entry level critical thinking skills, the ability to analyze and solve problems using logical and creative methods.
D. Demonstrate at the entry level effective written, verbal and nonverbal communication skills.

Units

P.O.S.T. Modular Training

The first two of three modules of the Modular Police Academy are offered for qualified students. These courses meet the State of California, Commission on Peace Officers Standards and Training (POST) requirements.

Recommended Sequence for Criminal Justice

A.A. - Criminal Justice (21150.AA)

Fall 1

CRIM-01 Criminology .......................................................... 3
or
CRIM-02 Introduction to Criminal Justice ......................... 3

CRIM-08 Introduction to Investigation ................................ 3
CRIM-33 Violence in the Family ....................................... 3
CRIM-35 Narcotics ............................................................. 3
CRIM-39 Police Tactics ...................................................... 3
CRIM-42A 832 PC Arrest Methods ..................................... 1.5
CRIM-42B 832 PC Firearms ................................................. 1
CRIM-42C Reserve Officer Module Level 3 ......................... 7

Suggested electives:
CRIM-08 Introduction to Investigation ................................ 3
CRIM-33 Family Violence ................................................. 3
CRIM-39 Police Tactics ...................................................... 3
CRIM-42A 832 PC Arrest Methods ..................................... 1.5
CRIM-42B 832 PC Firearms ................................................. 1
CRIM-42C Reserve Officer Module Level 3 ......................... 7
CRIMINAL JUSTICE (CRIM)

CRIM-01 CRIMINOLOGY
(CSU breadth area D0)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is an analysis of the nature and patterning of criminality and theories of criminal behavior. Crime control policies are critically examined regarding linkages among 1) social conflicts and inequalities, 2) criminal laws and enforcement practices, and 3) social deviance. (11/09)

CRIM-02 INTRODUCTION TO CRIMINAL JUSTICE
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course pertains to the history and philosophy of criminal justice in America. The course will emphasize the three major components of the system: court, corrections, and law enforcement. It will then examine the role of each. (11/09)

CRIM-03 CRIMINAL PROCEDURES
3 units: 3 hours lecture.
Prerequisite: CRIM-01 or CRIM-02: ENGL-85.
This course covers the examination of due process from pre-arrest through trial and appeal. The history of due process and precedent will be examined through statutory law and interpretations of law reflected in court decisions with particular focus upon the impact of interpretations of Fourth, Fifth, Sixth, Eighth, and Fourteenth Amendments. (12/11)

CRIM-04 CRIMINAL LAW
3 units: 3 hours lecture.
Prerequisite: ENGL-85. One-way corequisite: CRIM-01 or CRIM-02.
This course offers an analysis of the doctrines of criminal liability in the United States and the classification of crimes against persons, property, morals, and public welfare. Special emphasis is placed on the classification of crime, the general elements of crime, the definitions of common and statutory law, and the nature of acceptable evidence. This course utilizes case law and case studies to introduce students to criminal law. The completion of this course offers a foundation upon which upper-division criminal justice courses will build. The course will also include some limited discussion of prosecution and defense decision making, criminal culpability, and defenses to crime. (12/11)

CRIM-05 COMMUNITY AND HUMAN RELATIONS
3 units: 3 hours lecture.
One-way corequisite: CRIM-01 or CRIM-02. Advisory: ENGL-85.
This course covers the relationship of criminal justice agents and the community; causal and symptomatic aspects of community understanding; lack of cooperation and mistrust; study of behavioral causes; and ways to develop and maintain amicable relationships within a diverse multicultural population. (12/11)

CRIM-06 INTRODUCTION TO EVIDENCE
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is an analysis of the nature and patterning of criminality and theories of criminal behavior. Crime control policies are critically examined regarding linkages among 1) social conflicts and inequalities, 2) criminal laws and enforcement practices, and 3) social deviance. (11/09)

CRIM-08 INTRODUCTION TO INVESTIGATION
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course covers the fundamentals of investigation; techniques procedures, and ethical issues of investigation of crime, including organization of the investigative process, crime scene searches, recording, collection, and preservation of physical evidence, interviewing and interrogating, surveillance, source of information, utility of evidence, scientific analysis of evidence and the role of the investigator in the trial process. (12/11)
CRIM-10  WRITING FOR CRIMINAL JUSTICE
3 units: 3 hours lecture.
Prerequisite: CRIM-04. Advisory: ENGL-85.
This course covers the techniques of communicating facts, information, and ideas effectively in a simple, clear, and logical manner in the various types of criminal justice system reports: letters, memoranda, directives, and administrative reports. Emphasis is placed on criminal justice terminology, the use of English, and the organization of information. The student will also receive practical experience in note taking and report writing; and the preparation for the presentation of testimony in court. (11/09)

CRIM-30  JUVENILE PROCEDURES
3 units: 3 hours lecture.
One-way corequisite: CRIM-01 or CRIM-02 or CORR-01. Advisory: ENGL-85.
This course is an examination of the origin, development, and organization of the Juvenile Justice System as it evolved in the American Justice System. The course explores the theories that focus on Juvenile Law, courts and processes, and the constitutional protections extended to juveniles administered in the American Justice System. (12/11)

CRIM-33  VIOLENCE IN THE FAMILY
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course examines criminal law and the psycho-socio dynamics of child abuse, elder abuse, spousal abuse, and sexual assault. (12/09)

CRIM-35  NARCOTICS
3 units: 3 hours lecture.
Advisories: CRIM-01 or CRIM-02; ENGL-85.
This course is a review of the laws restricting and governing the use of narcotics and dangerous drugs, the psychological and physiological effects of the use and addiction to narcotics and dangerous drugs, and the procedures used to combat the problems facing law enforcement and society in relation to narcotics and dangerous drugs. (12/09)

CRIM-37  COMMUNICATION AND ETHICS IN LAW ENFORCEMENT
3 units: 3 hours lecture.
Advisories: ENGL-85; CRIM-01 or CRIM-02 or current employment as a law enforcement officer.
This course covers the ethical issues created by the congruent and incongruent match of criminal justice philosophy and law enforcement practice. Effective communication styles for courtroom, testimony, interrogation, and verbal judo will be examined, evaluated, and practiced. (11/06)

CRIM-39  POLICE TACTICS
1 unit: 0.5 hour lecture, 1.5 hours lab.
Advisory: ENGL-85.
This course is designed for pre-service and in-service law enforcement personnel and is designed to teach the students defensive tactics. A special emphasis will be placed on disarming assailants, takedowns, and holds. Officer safety and the moral and ethical application of defensive tactics will also be stressed. Student must, at the first class meeting, present to the instructor a physician’s clearance for strenuous physical activity. This course may be repeated 3 times. (12/09)

CRIM-42A  832 PC ARREST METHODS
(CILC area D)
1.5 units: 22.5 total hours lecture, 18 total hours lab.
Limitation on enrollment: *Students must be cleared by the California Department of Justice (DOJ) to participate. DOJ clearance is evaluated through the Live Scan fingerprint process. This clearance will reveal a qualifying/disqualifying criminal history background. *The absence of medical conditions that would prevent strenuous physical training during arrest and control methods training, use of force, and crimes in progress. Physicians’ clearance indicating good physical health must be presented to instructor at first class meeting.
Advisory: ENGL-85.
This course meets the requirements of the State of California, Commission on Peace Officers Standards and Training (POST). It covers topics such as ethics, professionalism, the criminal justice system, criminal law, property crimes, laws of arrest, laws of search and seizure, Investigative report writing, use of force, custodial issues, arrest and control methods. In accordance with POST regulations, students missing more than 5% of class time will not be certified in this course. This course is repeatable 2 times. (11/11)

CRIM-42B  832 PC FIREARMS
(CILC area D)
1 unit: 13 total hours lecture, 11 total hours lab.
Limitation on enrollment: *Students must be cleared by the California Department of Justice (DOJ) to participate. DOJ clearance is evaluated through the Live Scan fingerprint process. This clearance will reveal a qualifying/disqualifying criminal history background. *The absence of medical conditions that would prevent strenuous physical training during arrest and control methods training, use of force, and crimes in progress. Physicians’ clearance indicating good physical health must be presented to instructor at first class meeting.
Advisory: ENGL-85.
This course meets the requirements of the State of California, Commission on Peace Officers Standards and Training (POST). It covers topics such as firearms safety, basic firearms operation, ammunition, cleaning, maintenance and principles of shooting accuracy. Students missing more than 5% of class time will not be allowed to complete the class (POST regulation 1055(j) (4) section B). This course is repeatable 2 times. (11/11)

CRIM-42C  RESERVE OFFICER MODULE LEVEL 3
(CILC area D)
7 units: 108 total hours lecture, 54 total hours lab.
Limitation on enrollment: Students must be cleared by the California Department of Justice (DOJ) to participate. DOJ clearance is evaluated through the Live Scan fingerprint process. This clearance will reveal a qualifying/disqualifying criminal history background. In addition, there must be an absence of medical conditions that would prevent strenuous physical training during arrest and control methods training, use of force, and crimes in progress. A physician’s clearance indicating good physical health must be presented to the instructor at the first class meeting. Students must possess a California Driver’s License. Advisory: ENGL-85.
This course meets the requirements of the State of California, Commission on Peace Officers Standards and Training (POST). It covers topics such as: ethics, professionalism, the criminal justice system, criminal law, property crimes, crime against persons, laws of arrest, laws of search and seizure, Investigative report writing, vehicle operations, use of force, crimes in progress, traffic enforcement, preliminary investigation, custodial issues, arrest and control methods including baton, first aid, CPR, chemical agents, information systems, and cultural diversity. In accordance with POST regulations, students missing more than 5% of class time will not be certified in this course. This course is repeatable 2 times. (11/11)
CRIM-42D  RESERVE OFFICER MODULE LEVEL 2
[CILC area D]
10 units: 162 total hours lecture, 54 total hours lab.
Limitation on enrollment: 1 Students must be cleared by the California Department of Justice (DOJ) to participate. DOJ clearance is evaluated through the LiveScan fingerprint process. This clearance will reveal a qualifying/disqualifying criminal history background.
2 The absence of medical conditions that would prevent strenuous physical training during arrest and control methods training, use of force, and crimes in progress. Physicians' clearance indicating good physical health must be presented to instructor at first class meeting.
3 Student must possess a valid California Drivers' License.
Prerequisite: CRIM-42C. Advisory: ENGL-85.
This course satisfies the Level 2 Modular Format Basic Course training requirements of the Commission on Peace Officer Standards and Training (POST). It covers community relations, victimology, crisis intervention, property crimes, crimes against persons, general criminal statutes, laws of arrest, laws of search and seizure, presentation of evidence, investigative report writing, use of force, patrol techniques, vehicle pullovers, crimes in progress, traffic enforcement, unusual occurrences, preliminary investigation, arrest and control methods—including baton, firearms, chemical agents, persons with disabilities, crimes against the justice system, weapons violations, hazardous materials, cultural diversity and discrimination issues. Students missing more than 5% of class time will not be allowed to complete the class (POST regulations). This course is repeatable 2 times. (11/11)

CRIM-49A-ZZ SPECIAL TOPICS IN CRIMINAL JUSTICE
0.5 - 5 units: 0.5-8 hours lecture, 0-4 hours lab.
Advisory: ENGL-85.
This is a course designed to address special topics in criminal justice to meet the current needs of students. The course will allow pre-service and in-service personnel to maintain the most current training standards in the field. (12/09)
Crop Science
Career and Technical Education

DEGREES
A.A. - Crop Science
A.S. - Crop Science

CERTIFICATE
Crop Science

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Crop Science program at Merced College is designed to meet the need for trained personnel in a broad range of occupational opportunities involved with or related to producing crops.

The Merced College Crop Science Program maintains 240 acres of cropland which serve as a laboratory for Crop Science students. Equipment and methods used in the program are of the latest type and follow current trends and practices in crop-oriented production areas. Students take an active part in the farming operations by planning individual as well as group projects. The student not only gains the theoretical knowledge associated with production, but also experiences “hands-on” practical application.

Students of the Merced College Agriculture Division are raising a wide variety of crops including alfalfa, wheat, barley, corn, oats, almonds, and pasture. The operation also includes the raising of onion seed stock crops.

Career Opportunities
Only two out of ten Crop Science graduates are involved with the actual production end of Crop Science. They work as self-employed farmers or in the farming, ranching, or dairy environment. The remaining eight graduates find positions in crop-related occupations such as crop processing and marketing, commodity sales, agriculture chemical sales, irrigation district, U.S. Department of Agriculture, and banking and corporate holdings in Agriculture Management. These jobs are open to people from both urban and rural areas who have gathered their expertise through education in Crop Science.

DEGREE
A.A. - Crop Science (01150.AA)
The Associate in Arts Degree is available upon satisfactory completion of the graduation requirements in addition to 19 units from the following list. The core must be completed for this degree.

Program Student Learning Outcomes
A. With an emphasis on general education, properly plant different varieties of plants and analyze soil conditions and type for testing.
B. With an emphasis on general education, read the instructions, calibrate the equipment, and perform a soil analysis to determine soil type, soil structure and nutrient availability to determine the nutrient deficiencies in the soil.
C. With an emphasis on general education, identify and select the most appropriate plants and soils with the decision based on the environment conditions, plant characteristics and soil conditions.
D. With an emphasis on general, faced with either a hypothetical or actual problems dealing with plantings and soil conditions and the appropriate references, determine a solution to the problem.

Core:

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<th>Units</th>
<th>Description</th>
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<tr>
<td>3</td>
<td>CROP-10 Elements of Cereal Grain Production</td>
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<tr>
<td>3</td>
<td>CROP-12 Commercial Vegetable and Garden Production</td>
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<td>3</td>
<td>SOIL-10 Soil Science</td>
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<td>MECH-12 Agriculture Equipment</td>
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<td>MECH-31 Equipment Safety</td>
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A.S. - Crop Science (01150.AS)
The Associate in Science Degree in Crop Science is available upon satisfactory completion of the graduation requirements in addition to 30 units from the following list. The core must be completed for this degree.

Program Student Learning Outcomes
A. With an emphasis on science, properly plant different varieties of plants and analyze soil conditions and type for testing.
B. With an emphasis on science, read the instructions, calibrate the equipment, and perform a soil analysis to determine soil type, soil structure and nutrient availability to determine the nutrient deficiencies in the soil.
C. With an emphasis on science, identify and select the most appropriate plants and soils with the decision based on the environment conditions, plant characteristics and soil conditions.
D. With an emphasis on science, faced with either a hypothetical or actual problems dealing with plantings and soil conditions and the appropriate references, determine a solution to the problem.

Core:

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<tr>
<td>3</td>
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<td>MECH-31 Equipment Safety</td>
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## CROP PRODUCTION (CROP)

**CROP-10 ELEMENTS OF CEREAL GRAIN PRODUCTION**
- **3 units**: 2 hours lecture, 3 hours lab.
- **Advisories**: ENGL-85; MATH-80.
- This course is a study of production principles, which include botany, taxonomy, soil tillage, fertilization, variety and seed selection, pest management, harvest, processing, storage, and marketing for important fiber, food, and cereal crops in California. Covered crops will include cotton, sugar beets, wheat, rice, barley, sorghum, corn, oats, safflower, legumes for seed, and potatoes. A field trip to a major production area is required. (9/04)

**CROP-12 COMMERCIAL VEGETABLE AND GARDEN PRODUCTION**
- **3 units**: 2 hours lecture, 3 hours lab.
- **Advisories**: ENGL-85; MATH-80.
- This course is a study of vegetable production covering the botany, cultural production, harvesting, processing, growth characteristics, fertility, pests, and marketing of the major warm season and cool season vegetable crops in California. A field trip into a major vegetable production region is required. (9/04)

**CROP-13 FORAGE CROPS**
- **3 units**: 2 hours lecture, 3 hours lab.
- **Prerequisite/Advisory**: None.
- This course will cover production, harvesting, and utilization of principal California forage crops. The importance of forage crops as a supplement to livestock enterprises will also be covered. The use of forage crops as soil enhancers, and irrigated and range pastures, will be discussed.

### Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CROP-10</td>
<td>Elements of Cereal Grain Production</td>
<td>3</td>
</tr>
<tr>
<td>CROP-12</td>
<td>Commercial Vegetable and Garden Production</td>
<td>3</td>
</tr>
<tr>
<td>PLSC-12</td>
<td>Weeds</td>
<td>3</td>
</tr>
<tr>
<td>SOIL-10</td>
<td>Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>SOIL-11</td>
<td>Fertilizers and Soil Amendments</td>
<td>3</td>
</tr>
<tr>
<td>MECH-12</td>
<td>Agriculture Equipment</td>
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</tr>
<tr>
<td>MECH-31</td>
<td>Equipment Safety</td>
<td>1</td>
</tr>
<tr>
<td>AGBS-18</td>
<td>Agricultural Computer Applications</td>
<td>3</td>
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<tr>
<td>CROP-13</td>
<td>Forage Crops</td>
<td>3</td>
</tr>
<tr>
<td>FPRO-12</td>
<td>Vineyard Production and Management</td>
<td>3</td>
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<td>FPRO-13</td>
<td>Fruit Tree Maintenance</td>
<td>3</td>
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<td>MECH-21</td>
<td>Hydraulics</td>
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<td>MECH-22A</td>
<td>Diesel Engines</td>
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<td>PLSC-13</td>
<td>Economic Entomology</td>
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<td>LAND-16</td>
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### Electives

Recommended Sequence: A.A. - Crop Science  (01150.AA)

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<th>Course Title</th>
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<tr>
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<td>SOIL-11</td>
<td>Fertilizers and Soil Amendments</td>
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<td>PLSC-12</td>
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</table>

### Certificate

**Certificate Crop Science (01150.CT)**

A Certificate of Achievement will be awarded upon satisfactory completion of the 19 unit core and 18 units from the electives below.

#### Program Student Learning Outcomes

- **A.** Properly plant different varieties of plants and analyze soil conditions and type for testing.
- **B.** Read the instructions, calibrate the equipment, and perform a soil analysis to determine soil type, soil structure and nutrient availability to determine the nutrient deficiencies in the soil.
- **C.** Identify and select the most appropriate plants and soils with the decision based on the environment conditions, plant characteristics and soil conditions.
- **D.** Faced with either a hypothetical or actual problems dealing with plantings and soil conditions and the appropriate references, determine a solution to the problem.

#### Core Courses

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Recommended Sequence: Certificate Crop Science (01150.CT)

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FRUIT PRODUCTION (FPRO)
FPRO-12 VINEYARD PRODUCTION AND MANAGEMENT
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
The production and management decisions for grapes, berries, and kiwi fruit will be presented. Topics will include climate zones, soil selection, financing, farm organization, irrigation systems, field layout, variety selection, nutritional needs, harvesting, labor management, marketing, and budgeting. Students will be required to prepare a budget and calendar of operations. (12/06)

FPRO-13 FRUIT TREE MAINTENANCE
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
This course is designed to evaluate management decisions for fruit and nut trees. Management topics will include studies of climate zones, soil selection, financing, farm organization, irrigation systems, field layout, varietal selection, nutritional needs, harvesting, labor management, marketing, and budgeting. The student will be required to prepare a budget and calendar of orchard operations. (9/04)

PLANT SCIENCE (PLSC)
PLSC-10 ELEMENTS OF PLANT SCIENCE
(CSU breadth area B2/B3) (IGETC area 5B)
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
This course is designed to provide the students with a working knowledge of fundamental structures and processes of plants. Principles to be applied cover plant structures, physiology, heredity, environmental relationship to growth, adaptation, and management of crops. Techniques of research, exploration of plant growth, and identification of economical crops will be included. (12/06)

PLSC-12 WEEDS
3 units: 3 hours lecture.
Advisory: ENGL-85; MATH-80.
This is a study of classification, identification, and life cycle of common and poisonous weeds in California which are detrimental to cultivated crops, grasslands, animals, and man. Management practices include: prevention, mechanical, biological, and chemical methods. Weed establishment and chemical resistance are also covered. (12/06)

PLSC-13 ECONOMIC ENTOMOLOGY
3 units: 3 hours lecture.
Advisories: ENGL-85; MATH-80.
This course will cover insects and mites of economic importance to agriculture. Morphology, taxonomy, identification, life cycles, hosts, habitat relationships, and control methods will be discussed. Collection and labeling of specimens will be required. (12/06)

PLSC-48 PLANT SCIENCE: PROBLEMS
2 units: 6 hours lab.
Advisories: ENGL-85; MATH-80.
This course will offer students opportunity for investigating a deeper interest in the field of Plant Science. The interest areas will include but not be limited to: crop breeding, propagation, crop production, student projects, greenhouse management, soil management, and soil testing. (12/06)

PLSC-70 A-Z SPECIAL TOPICS IN PLANT SCIENCE
.5 - 4 units: 0.5 - 4 hours lecture, 1.5 - 12 hours lab.
Prerequisite/Advisory: None.
This course is the study of basic principles, processes, and theories of the special topic being presented during this semester.

SOIL SCIENCE (SOIL)
SOIL-10 SOIL SCIENCE
(CSU breadth area B1/B3) (IGETC area 5A)
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
This course provides a basic knowledge of the physical, chemical, and biological properties of soils and their characteristics. The course includes factors of fundamental soil properties, soil and plant relationships, principles of soil formation, fertilizers and soil management, salinity, pH, erosion management, and nonagricultural uses. (12/04)

SOIL-11 FERTILIZERS AND SOIL AMENDMENTS
3 units: 3 hours lecture.
This course will cover the composition, value, selection and use of fertilizer materials and soil amendments. Soil, plant, and fertilizer relationships will be covered. Application practices common to area crops and soils will be discussed. (2/09)
## CSU General Education Breadth

### CERTIFICATE
CSU General Education Breadth

### CERTIFICATE (2/08)
CSU General Education Breadth (49100.CT)

A minimum of 39 units from the following:
Students must complete a minimum of 39 units used to satisfy the CSU Transfer Breadth Requirements. Students must receive full certification of the CSU General Education Breadth lower division pattern, which requires a grade of "C" or better in Area A and Area B-4. See the CSU Transfer Breadth requirements patterns listed in the Merced College catalog or consult with a Merced College counselor.

### Dairy Husbandry (See Animal Science)
Career and Technical Education

<table>
<thead>
<tr>
<th>Dean</th>
<th>James Andersen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone</td>
<td>(209) 384-6250</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Counseling</th>
<th>(209) 384-6314</th>
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<tr>
<td>Cooperative Work Experience</td>
<td>(209) 384-6364</td>
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</table>

<table>
<thead>
<tr>
<th>Area Office</th>
<th>AG-Office</th>
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</thead>
</table>

120 • CSU General Education Breadth •
DANCE (DNCE)

DNCE-14D1 BEGINNING JAZZ DANCE (Also: PHED-14D1)
1 unit: 0.5 hour lecture, 1.5 hours lab.
Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.
This is a course designed to introduce the basic techniques, rhythms, and combinations of jazz movement. The class will include stretching exercises, coordination exercises, and general body conditioning exercises. This course may not be repeated. (3/06)

DNCE-14D2 INTERMEDIATE JAZZ DANCE (Also: PHED-14D2)
1 unit: 0.5 hour lecture, 1.5 hours lab.
Prerequisite: DNCE-14D1 or PHED-14D1. Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.
Students will be introduced to intermediate dance techniques. Basic skills will be reviewed along with an emphasis on conditioning and flexibility. Additional technical study includes double pirouettes, chaîne and piqué turns. Students will be required to develop and perform short routines in class. This course may not be repeated. (3/06)

DNCE-14D3 ADVANCED JAZZ DANCE (Also: PHED-14D3)
1 unit: 0.5 hour lecture, 1.5 hours lab.
Prerequisite: DNCE-14D2 or PHED-14D2. Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.
This course emphasizes advanced conditioning, control, stage presence and dance quality performances. Students must be available for rehearsal and performances of productions to which they may be assigned. This course may not be repeated. (3/06)
Diesel Equipment Technology

Career and Technical Education

DEGREES
A.A. - Diesel Equipment Technology
A.S. - Diesel Equipment Technology

CERTIFICATE
Diesel Equipment Technology

Gainful Employment Disclosure Metrics

Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:

https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Diesel Equipment Technology program at Merced College is designed to meet the need for trained mechanics in all phases of the diesel equipment industry.

This program is based on “hands-on” skill development with course time divided into two segments, 30% classroom sessions and 70% working in a shop atmosphere, while under the supervision of factory trained instructors. Instructional areas include the trucking industry, bus repair, agricultural equipment, construction equipment, and industrial power. Students obtain skills used throughout the entire diesel equipment field in repair and maintenance of equipment. The sequence of courses within the diesel Equipment Technology Program encompass all phases of technical training to insure the success of both experienced and graduating technicians.

Merced College has a spacious shop, equipped with the latest model agriculture equipment and vehicles currently being used in the industry. Since the right tools are essential to proper training, Merced College provides students with state-of-the-art tools required for the repair of most complex machinery. The college also maintains a large inventory of equipment and training aids to allow students maximum “hands-on” experience on both vintage as well as the most current equipment on the market.

Career Opportunities
Employment opportunities for the Diesel Equipment Technician trainee are excellent. A recent survey of the Diesel Equipment Industry in Merced County has shown a need for 125 truck and bus mechanics and 75 agricultural and industrial equipment mechanics per year. In addition, there are jobs available in diesel fuel system shops, hydraulic shops, maintenance shops, and various other related industries.

Graduates from this program have been successfully placed on jobs locally, statewide, and nationally. The following are popular occupations: Diesel Truck Technician, Agriculture Equipment Technician, Field Service Technician, Marine Diesel Technician, Diesel Fuel Specialist, Electrical Specialist, Parts Person, Heavy Equipment Technician, Bus Mechanic, Industrial Equipment Technician, Service Manager, Hydraulic Specialist, Diesel Equipment Sales, and Air Conditioning Specialists

DEGREE (10/04)
A.A. - Diesel Equipment Technology
(01200.AA)

The Associate in Arts Degree in Diesel Equipment Technology is available upon satisfactory completion of the graduation requirements and completion of 39 units from the following major requirements.

Program Student Learning Outcomes
A. With an emphasis on general education, explain the basic theory of the subject matter or system for the course of instruction based on industry standards.
B. With an emphasis on general education, analyze a scenario based upon an equipment system failure / problem / complaint.
C. With an emphasis on general education, employ a systematic approach to troubleshooting a system malfunction and prepare a solution.
D. With an emphasis on general education, demonstrate the correct tools/supplies required to diagnose/repair a malfunction.
E. With an emphasis on general education, verify if the path of repair was correct by testing and/or completing a work order/report.

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<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tr>
<td>MECH-06</td>
<td>Fundamentals of Oxy-Fuel Welding and Shielded</td>
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<tr>
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<td>Metal Arc Welding</td>
<td>3</td>
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<td>Hydraulics</td>
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<td>Diesel Engines</td>
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<td>Diesel Fuel System Diagnostics</td>
<td>2</td>
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<td>Power Trains</td>
<td>4</td>
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<td>Power Equipment Electrical Systems</td>
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<td></td>
<td>Equipment Mechanics Skills</td>
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<td></td>
<td>Applied Electrical and Hydraulic Service</td>
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<td>Power Equipment Air Conditioning</td>
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<td>Compact Power Equipment</td>
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<td>Equipment Repair</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Truck Brakes and Chassis</td>
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</table>

39
DEGREE (10/04)
A.S. - Diesel Equipment Technology (01200.AS)

The Associate in Science Degree in Diesel Equipment Technology is available upon satisfactory completion of the graduation requirements and completion of 39 units from the following major requirements.

Program Student Learning Outcomes
A. With an emphasis on science, explain the basic theory of the subject matter or system for the course of instruction based on industry standards.
B. With an emphasis on science, analyze a scenario based upon an equipment system failure/problem/complaint.
C. With an emphasis on science, employ a systematic approach to troubleshooting a system malfunction and prepare a solution.
D. With an emphasis on science, demonstrate the correct tools/supplies required to diagnose/repair a malfunction.
E. With an emphasis on science, verify if the path of repair was correct by testing and/or completing a work order/report.

Program Student Learning Outcomes
A. With an emphasis on science, explain the basic theory of the subject matter or system for the course of instruction based on industry standards.
B. With an emphasis on science, analyze a scenario based upon an equipment system failure/problem/complaint.
C. With an emphasis on science, employ a systematic approach to troubleshooting a system malfunction and prepare a solution.
D. With an emphasis on science, demonstrate the correct tools/supplies required to diagnose/repair a malfunction.
E. With an emphasis on science, verify if the path of repair was correct by testing and/or completing a work order/report.

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<tbody>
<tr>
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<td>Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding</td>
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<td>MECH-22B</td>
<td>Diesel Engines</td>
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<td>Diesel Fuel System Diagnostics</td>
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<td>MECH-24</td>
<td>Power Trains</td>
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<td>MECH-26</td>
<td>Power Equipment Electrical Systems</td>
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<td>MECH-30</td>
<td>Equipment Mechanics Skills</td>
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<td>MECH-31</td>
<td>Equipment Safety</td>
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<td>MECH-32</td>
<td>Applied Electrical and Hydraulic Service</td>
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<td>MECH-33</td>
<td>Power Equipment Air Conditioning</td>
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<td>MECH-51</td>
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### Requirements Listed Below

A Certificate of Achievement in Diesel Equipment Technology will be awarded upon successful completion of 39 units from the major requirements listed below.

Program Student Learning Outcomes
A. Explain the basic theory of the subject matter or system for the course of instruction based on industry standards.
B. Analyze a scenario based upon an equipment system failure/problem/complaint.
C. Employ a systematic approach to troubleshooting a system malfunction and prepare a solution.
D. Demonstrate the correct tools/supplies required to diagnose/repair a malfunction.
E. Verify if the path of repair was correct by testing and/or completing a work order/report.

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<td>MECH-06</td>
<td>Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>MECH-21</td>
<td>Hydraulics</td>
<td>3</td>
</tr>
<tr>
<td>MECH-22A</td>
<td>Diesel Engines</td>
<td>4</td>
</tr>
<tr>
<td>MECH-22B</td>
<td>Diesel Engines</td>
<td>4</td>
</tr>
<tr>
<td>MECH-23</td>
<td>Diesel Fuel System Diagnostics</td>
<td>2</td>
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<tr>
<td>MECH-24</td>
<td>Power Trains</td>
<td>4</td>
</tr>
<tr>
<td>MECH-26</td>
<td>Power Equipment Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>MECH-22A</td>
<td>Diesel Engines</td>
<td>4</td>
</tr>
<tr>
<td>MECH-22B</td>
<td>Diesel Engines</td>
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<tr>
<td>MECH-23</td>
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<tr>
<td>MECH-24</td>
<td>Power Trains</td>
<td>4</td>
</tr>
<tr>
<td>MECH-26</td>
<td>Power Equipment Electrical Systems</td>
<td>3</td>
</tr>
<tr>
<td>MECH-30</td>
<td>Equipment Mechanics Skills</td>
<td>2</td>
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<tr>
<td>MECH-31</td>
<td>Equipment Safety</td>
<td>1</td>
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<tr>
<td>MECH-32</td>
<td>Applied Electrical and Hydraulic Service</td>
<td>3</td>
</tr>
<tr>
<td>MECH-33</td>
<td>Power Equipment Air Conditioning</td>
<td>2</td>
</tr>
<tr>
<td>MECH-35</td>
<td>Compact Power Equipment</td>
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</tr>
<tr>
<td>MECH-40</td>
<td>Equipment Repair</td>
<td>2</td>
</tr>
</tbody>
</table>

### Recommended Sequence:

- Diesel Equipment Technology (01200.CT)

Fall 1
- MECH 21: Hydraulics .........................................................3
- MECH 22A: Diesel Engines ..................................................4
- MECH 26: Power Equipment Electrical Systems .........................2
- MECH 30: Equipment Mechanics Skills ..................................1
- MECH 31: Equipment Safety ................................................1

Spring 1
- MECH 22B: Diesel Engines ..................................................4
- MECH 23: Diesel Fuel Systems Diagnostics ..............................2
- MECH 24: Power Trains .......................................................4
- MECH 32: Applied Electrical and Hydraulic Service ..................3

Fall 2
- MECH 6: Fundamentals of Welding ........................................3
- MECH 33: Power Equipment Air Conditioning ..............................2
- MECH 51: Truck Air Braces and Chassis ................................4

Spring 2
- MECH-35: Compact Power Equipment .......................................3
- MECH-40: Equipment Repair ..................................................2
Gainful Employment Disclosure Metrics

Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description

The Drafting Technology program is designed to guide students to a practical understanding and application of design principles and technology. The program is broken into two tracts, Mechanical and Architectural, which focus on their respective industries. Students start by learning how to read prints and draw using 2D CAD systems, they then advance through 3D CAD, design and documentation practices, and specialized courses depending on their emphasis. Upon Completion of either of the Design Certificates students will have taken a project from concept through design and documentation to a finished state. Students will produce prototypes/models of their designs using rapid production methods that include 3D printers, and a CNC Mill.

Career Opportunities

CAD operator, detailer, draftsmen, product designer, drafting technician, engineering assistant, home designer

The Drafting Technology program can also be used as a stepping off point for students wishing to peruse Bachelors’ degrees in Industrial Technology, Industrial Engineering, Manufacturing Engineering, Mechanical Engineering, Construction Management, Architectural Engineering, and Architecture.
DEGREE (2/11)
A.A. - CAD Draftsman - Mechanical (09102.AA)

The CAD Draftsman - Mechanical A.A. shows that a student knows how to effectively use 2D and 3D drafting programs. Students also are familiar with ANSI standards, and know what is required to produce complete drawings. An Associates in Arts Degree in CAD Draftsman - Mechanical is available upon successful completion of the graduation requirements and completing the 18 unit core and 3-4 units from the electives list.

Program Student Learning Outcomes
A. Create a set of drawings using CAD programs.
B. Organize dimensions in a meaningful manor as required by standards.
C. Employ the newest technology related to Mechanical drafting/design

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>DRFT-04A</td>
<td>Fundamentals of Computer-Aided Drafting</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-04B</td>
<td>Introduction to 3D</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-04C</td>
<td>Computer-Aided Drafting - AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-05</td>
<td>Engineering Graphics</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-25</td>
<td>Descriptive Geometry</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-44</td>
<td>Print Reading and Sketching</td>
<td>3</td>
</tr>
</tbody>
</table>

plus 3 units from the following courses:
CPSC-01 Introduction to Management Information Systems...4
CPSC-30 Computer Applications ..................................3
INDT-38 Industrial Technology Computer Applications and Literacy ........................................3

21-22

CERTIFICATE (2/11)
CAD Draftsman - Architectural (09101.CL)

The CAD Draftsman - Architectural Certificate shows that a student knows how to effectively use 2D and 3D drafting programs. Students also are familiar with Architectural standards, and know what is required to produce a complete set of plans. A Certificate of Achievement in CAD Draftsman - Architectural is available upon successful completion of the 18-unit core and 3-4 units from the electives list.

Program Student Learning Outcomes
A. Create a set of drawings using CAD programs.
B. Organize dimensions in a meaningful manner as required by standards.
C. Employ the newest technology related to Architectural drafting/design.

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<tr>
<td>DRFT-04B</td>
<td>Introduction to 3D</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-41</td>
<td>Civil Drafting</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-42A</td>
<td>Architectural Drafting - AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-42B</td>
<td>Architectural Drafting - 3D</td>
<td>3</td>
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</table>

plus 3 units from the following courses:
CPSC-01 Introduction to Management Information Systems...4
CPSC-30 Computer Applications ..................................3
INDT-38 Industrial Technology Computer Applications and Literacy ........................................3

21-22

CERTIFICATE (2/11)
CAD Drafting - Architectural Design (09104.CT)

The CAD Drafting - Architectural Design Certificate shows that a student is familiar with advanced 3D Architectural tools, CalGreen, and building techniques. A Certificate of Achievement in CAD Drafting - Architectural Design is available upon successful completion of the 27-unit core and 6-7 units from the electives list.

Program Student Learning Outcomes
A. Create all drawings and documentation needed to explain the design of a building.
B. Apply new building techniques as well as CalGreen codes to building design.
C. Choose the best software package to accomplish stated goals.

<table>
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<tr>
<td>DRFT-04A</td>
<td>Fundamentals of Computer-Aided Drafting</td>
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<tr>
<td>DRFT-04B</td>
<td>Introduction to 3D</td>
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<tr>
<td>DRFT-10</td>
<td>Rendering and Animation</td>
<td>3</td>
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<tr>
<td>DRFT-35</td>
<td>Capstone Design Project</td>
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<td>DRFT-41</td>
<td>Civil Drafting</td>
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<tr>
<td>DRFT-42A</td>
<td>Architectural Drafting-AutoCAD</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-42B</td>
<td>Architectural Drafting - 3D</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-43</td>
<td>Sustainable Architecture</td>
<td>3</td>
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<tr>
<td>DRFT-44</td>
<td>Print Reading and Sketching</td>
<td>3</td>
</tr>
</tbody>
</table>

plus 3 units from the following courses:
CPSC-01 Introduction to Management Information Systems...4
CPSC-30 Computer Applications ..................................3
INDT-38 Industrial Technology Computer Applications and Literacy ........................................3

21-22
### CERTIFICATE (2/11)

**CAD Drafting - Mechanical Design**

(09105.CT)

The CAD Drafting - Mechanical Design Certificate shows that a student is familiar with advanced 3D modeling tools, production methods, and product design concepts. A Certificate of Achievement in CAD Drafting - Mechanical Design is available upon successful completion of the 30-unit core and 3-4 units from the electives list.

Program Student Learning Outcomes

A. Design Mechanical Assemblies.
B. Choose the best software package to accomplish stated goals.
C. Create all the associated drawings, and documentation needed to manufacture the product.

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<td>Introduction to 3D</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-04C</td>
<td>Introduction to Parametric Modeling</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-04D</td>
<td>Advanced Parametric Modeling</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-05</td>
<td>Engineering Graphics</td>
<td>3</td>
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<tr>
<td>DRFT-06</td>
<td>Production Methods</td>
<td>3</td>
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<tr>
<td>DRFT-10</td>
<td>Rendering and Animation</td>
<td>3</td>
</tr>
<tr>
<td>DRFT-25</td>
<td>Descriptive Geometry</td>
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<tr>
<td>DRFT-35</td>
<td>Capstone Design Project</td>
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</tr>
<tr>
<td>DRFT-44</td>
<td>Print Reading and Sketching</td>
<td>3</td>
</tr>
</tbody>
</table>

plus 3 units from the following courses:

- **CPSC-01**: Introduction to Management Information Systems...4
- **CPSC-30**: Computer Applications..................................3
- **INDT-38**: Industrial Technology Computer Applications and Literacy..............................................3

**Total**: 33-34 units

### CERTIFICATE (2/11)

**CAD Operator (09103.CB)**

The CAD Operator Certificate shows that a student is familiar with 2D, and basic 3D CAD programs. Students who complete this certificate are able to use AutoCAD and SketchUp to create 2D drawings and 3D models, they are also familiar with ways to modify AutoCAD to suit their drawing style, and increase productivity. A Certificate of Achievement in CAD Operator is available upon successful completion of the 9-unit core and 3-4 units from the electives list.

Program Student Learning Outcomes

A. Plan and Implement changes to the AutoCAD Interface.
B. Create 3D models effectively using AutoCAD, and SketchUp.
C. Use of Computers effectively for industrial applications.

<table>
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<td>DRFT-44</td>
<td>Print Reading and Sketching</td>
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</tr>
</tbody>
</table>

plus 3 units from the following courses:

- **CPSC-01**: Introduction to Management Information Systems...4
- **CPSC-30**: Computer Applications..................................3
- **INDT-38**: Industrial Technology Computer Applications and Literacy..............................................3

**Total**: 12-13 units

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**DRAFTING TECHNOLOGY (DRFT)**

**DRFT-04A FUNDAMENTALS OF COMPUTER-AIDED DRAFTING**

3 units: 2 hours lecture, 3 hours lab.

Limitation on enrollment: Limited to available software licenses at the facilities. Prerequisite: MATH-80. One-way corequisite: CPSC-30 or INDT-38. Advisories: ENGL-81, ENGL-84.

This course uses AutoCAD. The student will progress through the fundamental and some intermediate commands. Topics included are: drawing set-up, drawing, editing, text, and dimensioning. Also, the student will construct multi-view drawings as used in industry. Most drawings will be printed from paper space. (2/11)

**DRFT-04B INTRODUCTION TO 3D**

3 units: 2 hours lecture, 3 hours lab.

Limitation on enrollment: Limited to available software licenses at the facilities. Prerequisite: DRFT-04A.

This course is an introduction to 3D using both SketchUp and AutoCAD. Students will gain an understanding of how 3D modeling works and how it can be used with other applications. Other topics that will be covered are using Google Earth, Materials, the AutoCAD UCS system, and basic rendering. (2/11)

**DRFT-04C INTRODUCTION TO PARAMETRIC MODELING**

3 units: 2 hours lecture, 3 hours lab.

Limitation on enrollment: Limited to available software licenses at the facilities. Prerequisite: DRFT-04B.

This course uses Inventor. Students will use basic, and intermediate commands to create and modify solid models. The models will be used to create Small Assemblies (less than 10 parts), 2D drawings, and Renderings. (2/11)

**DRFT-04D ADVANCED PARAMETRIC MODELING**

3 units: 2 hours lecture, 3 hours lab.

Limitation on enrollment: Limited to available software licenses at the facilities. Prerequisite: DRFT-04C.
This course uses Inventor and SolidWorks. Students will use advanced commands in both programs. Some of the topics covered are 3D sketches, Tabular Parts, Large Assemblies, and Top-Down Assemblies. (2/11)

DRFT-05 ENGINEERING GRAPHICS (Also: ENGR-05)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: DRFT-04A. Advisories: ENGL-81, ENGL-84; MATH-80.
This course utilizes computer graphics to prepare engineering drawings including geometric constructions, multi-view drawing, sectioning, auxiliary views, pictorial drawing, and tolerancing. (2/10)

DRFT-06 PRODUCTION METHODS
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: DRFT-05 or DRFT-44 or DRFT-59.
This course covers different production methods and materials. Students will learn how the production method influences the design of a product. Materials covered are metals, plastics, matrix, and composites. Some of the methods covered are milling/turning, layups, casting, forging, punching, molding, and additive manufacturing. The use of welding and adhesives will also be covered. Students will create drawings of parts and production equipment. (12/11)

DRFT-10 RENDERING AND ANIMATION
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Limited to available software licenses at the facilities. Prerequisites: DRFT-04A. Advisories: ENGL-81, ENGL-84; MATH-80.
This course uses 3DS Max Design. Students will learn how to create objects in 3DS, Box Modeling, Material mapping, Rendering, and Animation. Students will also learn how to import objects for use in animations and how to complete basic video editing. (2/11)

DRFT-25 DESCRIPTIVE GEOMETRY (Also: ENGR-25)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: DRFT-04A. Advisories: MATH-02.
This course covers descriptive geometry methods, problem solving through the auxiliary view and two-view methods. The development of graphical methods in their application to graphs, charts, and spatial and vector geometry will be studied. (2/10)

DRFT-35 CAPSTONE DESIGN PROJECT
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Limited to available software licenses at the facilities. Prerequisites: DRFT-04C or DRFT-43. One-way corequisite: DRFT-10.
This course will guide students in the design process. Students will learn the steps in creating a new design: identify problem, planning, research, design, documentation, presentation. They will experience the different steps as they design a product/building to solve a problem or meet a need. Students will use different software as needed throughout the project, and they will learn how to use project management software. (2/11)

DRFT-41 CIVIL DRAFTING
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Limited to available software licenses at the facilities. Prerequisite: DRFT-04A.
This course uses AutoCAD. Students will learn about and create civil drawings. Some of the drawings that will be included are Traverses, topo maps, plan and profile drawings, cut/fill, and borehole drawings. Students will also learn about file formats that are used with survey equipment and how to integrate them with AutoCAD. (2/11)

DRFT-42A ARCHITECTURAL DRAFTING - AutoCAD
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Limited to available software licenses.
Prerequisite: DRFT-04A.
This course covers the drafting techniques used in the preparation of working drawings for building construction, with special emphasis on house planning, house construction, and building codes and regulations. The course includes the drawing of a short set of house plans, floor plan, plot plan, elevation, and perspective. (2/11)

DRFT-42B ARCHITECTURAL DRAFTING -- 3D
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Limited to available software licenses.
Prerequisite: DRFT-42A.
This course uses REVIT, and covers the techniques used in the making of working drawings for building construction. The program used creates a 3-D drawing of a house. A detailed cutting list and bill of materials is also generated relative to the drawings. There will be special emphasis on a complete set of house plans adequate for bidding purposes. Also included will be sections, details, interior elevations, foundation plan, heating and air conditioning, specification, and a model. (2/11)

DRFT-43 SUSTAINABLE ARCHITECTURE
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Limited to available software licenses. One-way corequisite: DRFT-42B.
This course uses Revit. Students will learn how the sustainable movement has influenced architecture. This course will cover CalGreen, LEED, and sustainable building methods. Students will learn how to use Revit to create the documentation needed. (12/11)

DRFT-44 PRINT READING AND SKETCHING
3 units: 2 hours lecture, 3 hours lab.
Prerequisites: DRFT-04C, DRFT-43/ENGR-05.
This course is designed to permit the student to experience those areas not covered in the objectives of DRFT-04ABC and DRFT-05/ENGR-42B. The course will help prepare the student for employment in the architectural trade with necessary computer-aided drafting skills. Techniques and information needed for employment in the trade occupations will receive special emphasis. (1/02)

DRFT-48A SPECIAL PROBLEMS - ARCHITECTURAL DRAFTING
2 units: 6 hours lab.
Prerequisite: DRFT-42B.
This course is designed to allow the student to gain experience in those areas not covered in the objectives of DRFT-04ABC. This course will teach students how to customize the AutoCAD interface. Topics covered will be editing the Ribbon, Aliases, Macros, and AutoLisp, and the use of pre-defined tool sets. (2/11)

DRFT-48B SPECIAL PROBLEMS IN CAD SOFTWARE MODIFICATION
3 units: 9 hours lab.
Prerequisites: DRFT-04A.
This course is designed to permit the student to experience those topics not covered in the objectives of DRFT-04ABC. This course will teach students how to customize the AutoCAD interface. Topics covered will be editing the Ribbon, Aliases, Macros, and AutoLisp, and the use of pre-defined tool sets. (2/11)

DRFT-48C SPECIAL PROBLEMS IN CAD - TODAY'S TECHNOLOGY
2 units: 6 hours lab.
Prerequisites: DRFT-04C, DRFT-05/ENGR-05.
This course is designed to permit the student to experience those areas not normally covered in the objectives of DRFT-04ABC and DRFT-05/ENGR-05. The course will help prepare the student for employment in the trade with entry-level skills. Techniques and information needed for employment in the trade occupations will receive special attention. (1/02)

DRFT-59 BASIC DRAFTING
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-81, ENGL-84; MATH-80.
This course covers principles of mechanical drafting and drafting. It is designed to help students communicate through sketching and drawing. The communication is covered as a presentation of ideas through drawings. (5/09)
Drama
Social Sciences, Humanities, and Fine Arts

DEGREE
A.A. - Drama

Program Description
These courses are designed to fulfill most lower division degree requirements of four-year colleges and universities. In addition, the Associate in Arts Degree in Drama will prepare the student for pre-professional and community theater.

DEGREE (12/09)
A.A. - Drama (10300.AA)

For an Associate in Arts Degree in Drama, students must meet the graduation requirements and complete the following courses.

Program Student Learning Outcomes
A. The student will be able to demonstrate an understanding of theatre as a collaborative art form.
B. The student will be able to perform or participate in a variety of theatrical genres from both contemporary and classical theatre at a level equal to junior level peers at four year institutions and pre-professional certificate programs.
C. The student will demonstrate high artistic standards and professional responsibility with regard to acting or technical proficiency, rehearsal preparation and live performance.
D. The student will be able to apply theatrical knowledge (practical and theoretical) to public performances, as a participant, performer or as an observer.
E. The student will acquire necessary skills in stage lighting design and operation, properties construction and design, and costume construction and design.
F. The student will be able to understand and appreciate diverse artistic styles, different genres, varied cultural performance histories and their origins.
G. The student will have an understanding and working knowledge of how to produce a play on the stage, including an appreciation of all theatre occupations - playwriting, directing, acting, design and technical production.

Units

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>DRAM-01</td>
<td>Introduction to Theater</td>
<td>3</td>
</tr>
<tr>
<td>DRAM-03</td>
<td>History of Dramatic Literature</td>
<td>3</td>
</tr>
<tr>
<td>DRAM-10</td>
<td>Beginning Acting</td>
<td>3</td>
</tr>
<tr>
<td>DRAM-15</td>
<td>Beginning Theater Crafts</td>
<td>3</td>
</tr>
</tbody>
</table>

Fall 1
DRAM-01: Introduction to Theater (3)
DRAM-02: Drama Productions (2)
DRAM-02L: Drama Productions Lab (1)
DRAM-10: Beginning Acting (3)

Spring 1
DRAM-03: History of Dramatic Literature (3)
DRAM-04: Actor's Workshop (2)
DRAM-04L: Actor's Workshop Lab (1)

Fall 2
DRAM-02: Drama Productions (2)
DRAM-02L: Drama Productions Lab (1)
DRAM-15: Beginning Theater Crafts (3)
DRAM Elective(s)

Spring 2
DRAM-04: Actor's Workshop (2)
DRAM-04L: Actor's Workshop Lab (1)

Recommended Sequence: A.A. - DRAMA (10300.AA)

Fall 1
DRAM-01: Introduction to Theater (3)
DRAM-02: Drama Productions (2)
DRAM-02L: Drama Productions Lab (1)
DRAM-10: Beginning Acting (3)

Spring 1
DRAM-03: History of Dramatic Literature (3)
DRAM-04: Actor's Workshop (2)
DRAM-04L: Actor's Workshop Lab (1)

Fall 2
DRAM-02: Drama Productions (2)
DRAM-02L: Drama Productions Lab (1)
DRAM-15: Beginning Theater Crafts (3)
DRAM Elective(s)

Spring 2
DRAM-04: Actor's Workshop (2)
DRAM-04L: Actor's Workshop Lab (1)

Plus required repetition:
DRAM-02: Drama Productions (total units 4)
DRAM-04: Actor's Workshop (total units 4)
DRAM-02L: Drama Productions Lab (total units 2)
DRAM-04L: Actor's Workshop Lab (total units 2)

Plus six units from the following electives:
DRAM-09: Voice Production for the Performer (3)
DRAM-11: Intermediate Acting (3)
DRAM-16: Intermediate Theater Crafts (3)
ENGL-08: Shakespeare (3)

128 • Drama •
DRAMA-01 INTRODUCTION TO THEATER
(CSU breadth area C1/C2) (IGETC area 3B)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is an introduction to the art of theater that delves into the nature of theatrical presentation, elements of dramatic structure, and the contributions of the playwright, actor, director, designer, technician, and audience. (3/12)

DRAMA-02 DRAMA PRODUCTIONS
2 units: 2 hours lecture.
Limitation on enrollment: Enrollment by audition or interview, instructor signature required. One-way corequisite: DRAM-02L.
Advisory: ENGL-85.
This course focuses on preparing students for the practical application of rehearsal techniques, play promotion, and production towards public performance using a different work or genre for each subsequent offering. Stage management, direction, rehearsal procedures, and marketing skills are stressed. Because a different work or genre is explored in each subsequent offering, the course may be repeated three times. (12/09)

DRAMA-02L DRAMA PRODUCTIONS LAB
1 unit: 3 hours lab.
Limitation on enrollment: Enrollment by audition or interview, instructor signature required. Advisory: ENGL-85.
This course is the lab portion of Drama Productions in which students put into practice learned stage skills and techniques, culminating in technical rehearsal and public performance of a college production. (12/09)

DRAMA-03 HISTORY OF DRAMATIC LITERATURE (Also: ENGL-03)
(CSU breadth area C1) (IGETC area 3A)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This course is a study of dramatic literature as a reflection of theater history, including the influence of staging, acting styles, scene design, and culture upon the playwright and his/her work. Classical to contemporary drama is examined. (11/04)

DRAMA-04 ACTOR’S WORKSHOP
2 units: 2 hours lecture.
Limitation on enrollment: Enrollment by audition or interview, instructor signature required. One-way corequisite: DRAM-04L.
Advisory: ENGL-85.
This course is an individual examination of basic acting techniques as applied to laboratory scenes and commencing in actual public performance. Critical evaluation, demonstration, and written reviews are required. Due to different styles and genres being examined each semester this course may be repeated three times. (12/09)

DRAMA-04L ACTOR’S WORKSHOP LAB
1 unit: 3 hours lab.
Limitation on enrollment: Enrollment by audition or interview, instructor signature required. Advisory: ENGL-85.
This course focuses on practical application in technical rehearsals and public performance of rehearsal skills, promotion, production skills and performance techniques begun in Actor’s Workshop. Due to different styles and genres being examined each semester, this class may be repeated three times. (12/09)

DRAMA-09 VOICE PRODUCTION FOR THE PERFORMER
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is designed to offer the student formal training in voice for the stage by providing the opportunity to develop a critical awareness of the vocal requirements of proper stage diction and projection. (2/07)

DRAMA-10 BEGINNING ACTING
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is designed to serve the needs of the beginning student in acting. Emphasis will be on stage techniques and character development for stage performance. The development of scene repertoire is also studied by choosing scenes to be memorized from various periods of dramatic literature. Critical evaluation, demonstration, and written reviews are required. (2/07)

DRAMA-11 INTERMEDIATE ACTING
3 units: 3 hours lecture.
Prerequisite: DRAM-10. Advisory: ENGL-85.
This course provides an in-depth application of techniques explored in Beginning Acting with an emphasis on characterization. Role analysis and auditioning techniques will also be explored. Critical evaluation, demonstration, and written reviews are required. (2/07)

DRAMA-15 BEGINNING THEATER CRAFTS
3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This course is a study of the physical aspects of theater crafts, including makeup, stagecraft, lighting, costuming, and sound production. Laboratory experience is gained in the application of principles of technical theater in actual productions. (2/07)

DRAMA-16 INTERMEDIATE THEATER CRAFTS
3 units: 2 hours lecture, 3 hours lab.
This course provides for a more advanced study of the physical aspects of theater production. Students are introduced to more advanced elements of design within technical theater and gain experience through actual application of design concepts and techniques of a minimum of one drama production. (2/07)

DRAMA-23 INTRODUCTION TO READER’S THEATER
3 units: 3 hours lecture.
Advisory: ENGL-85.
The course is designed to introduce students to the principles and performance of Reader’s Theater. Students will explore diverse forms of literature and learn to select and analyze material, adapt it to script form, prepare a script for performance, and use the voice and body effectively on stage. Scripts will be performed as in-class activities and, finally, in a public presentation. (2/01)

DRAMA-70A-ZZ FINE AND PERFORMING ARTS -- SPECIAL TOPICS
0.5 - 2 units: 0 - 2 hours lecture, 0 - 6 hours lab.
Advisory: ENGL-85.
This is a course covering a variety of topics of current interest to students of art. Different topics will be emphasized each time the course is offered. Sections of this course may vary in unit value depending on subject matter, meeting time, and format. Each letter may be taken only once. (2/01)
**Economics**  
**Social Sciences, Humanities, and Fine Arts**

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<tr>
<th><strong>ECONOMICS (ECON)</strong></th>
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<tr>
<td><strong>ECON-01A INTRODUCTION TO MACROECONOMICS</strong></td>
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<tr>
<td>(CSU breadth area D2) (IGETC area 4B)</td>
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<tr>
<td>3 units: 3 hours lecture.</td>
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<td>Advisories: ENGL-85; MATH-81.</td>
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<tr>
<td>ECON-01A is an introductory course in macroeconomic theories including the determination of income, output, employment, and prices in the economy; the monetary system; governmental fiscal, monetary, and income policies; economic growth; international trade; and economic development. (1/06)</td>
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</table>

| **ECON-01B INTRODUCTION TO MICROECONOMICS** |  |
| (CSU breadth area D2) (IGETC area 4B) |  |
| 3 units: 3 hours lecture. |  |
| Advisories: ENGL-85; MATH-81. |  |
| ECON-01B is an introductory course in microeconomic theories including maximization, benefit versus cost, rational choice, the analysis of demand and supply, the role of price in free markets, consumer behavior, market structure, production cost, competitive business models, and resource pricing. The course examines the nature of production, distribution, market outcomes, and the role of government in the market. (1/06) |  |
EDUCATION (EDUC)

EDUC-47 COLLEGE PLANNING AND LEARNING SYSTEMS
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is designed to help students improve study techniques for succeeding in college. The course will emphasize effective reading of textbooks, improving concentration and memory, getting the main idea, summarizing and outlining information, taking notes, listening to lectures, preparing for and taking exams, and strengthening vocabulary. (4/07)

EDUC-70A-ZZ SPECIAL TOPICS IN EDUCATION
0.5 - 3 units: 0.5 - 3 hours lecture.
Prerequisite/Advisory: None.
This course is designed to address special topics in education to meet current needs of students. Specific classes will be offered to help students understand the educational environment and their relationship to it. (11/96)

EDUC-87 STUDY SKILLS
3 units: 3 hours lecture.
Advisories: ENGL-80, ENGL-80L.
This course is designed to help improve study skills for succeeding in college. The course will emphasize effective reading of textbooks, improving concentration and memory, getting the main idea, summarizing and outlining information, taking notes, listening to lectures, preparing for and taking exams, and managing time. (4/07)
Electricity-Electronics
Career and Technical Education

DEGREES
A.A. - Computer and Networking Technology
A.A. - Electrical Technology
A.A. - Electronics Technician
A.A. - Industrial Electronics Technology
A.A. - Instrumentation and Process Control Technology

CERTIFICATES
Computer and Networking Technology
Electrical Technology
Electronics Technician
Industrial Electronics Technology
Instrumentation and Process Control Technology

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Electronics Department at Merced College is offering cross-disciplinary curricula that prepare students for rewarding entry-level technician positions in various high-tech fields as Electronics, Electrical, Computer Networking and Industrial Electronics, and Instrumentation and Process Control.

These programs introduce students to electrical and electronics tools, components, circuits, energy sources, analog and digital integrated devices that can be found in complex technical equipment. Hands-on laboratory exercises are designed to develop real-world practical skills in using modern test equipment for troubleshooting circuits and repairing various industrial computerized systems and networks, specific to each area of study.

DEGREE (2/09)
A.A. - Computer and Networking Technology (09040.AA)

For an Associate in Arts Degree in Computer and Networking Technology, students must meet the graduation requirements and complete the following required courses.

Program Student Learning Outcomes
A. Exhibit the ability to communicate effectively in accomplishing job related tasks.
B. Demonstrate field related entry level theoretical and practical skills.
C. Recognize an appreciation for life-long learning.
D. Employ the principles of job related safety requirements.

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<tr>
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<td>or ELCT-31</td>
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<td>Digital Logic Circuits and Systems</td>
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<td>ELCT-36</td>
<td>Networking Topologies and Cabling</td>
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<td>ELCT-40A</td>
<td>Networking for Home and Small Businesses</td>
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<td>Working at a Small-to-Medium Business or ISP</td>
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<tr>
<td>ELCT-40C</td>
<td>Routing and Switching in the Enterprise</td>
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<tr>
<td>ELCT-40D</td>
<td>Designing and Supporting Computer Networks</td>
<td>3</td>
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<td>ELCT-44</td>
<td>Electronic Shop Practices: Fabrication, Soldering, Rework, and Equipment Repair</td>
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<td>ELCT-51A</td>
<td>Personal Computer Configuration, Assembly and Repair</td>
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<td>ELCT-51B</td>
<td>A+ Certification Training</td>
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<tr>
<td>INDT-38</td>
<td>Industrial Technology Computer Applications and Literacy</td>
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DEGREE (2/08)
A.A. - Electrical Technology (09200.AA)

For an Associate in Arts Degree in Electrical Technology, students must meet the graduation requirements and complete the following required courses.

Program Student Learning Outcomes
A. Exhibit the ability to communicate effectively in accomplishing job related tasks.
B. Demonstrate field related entry level theoretical and practical skills.
C. Recognize an appreciation for life-long learning.
D. Employ the principles of job related safety requirements.

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<tr>
<td>ELCT-52</td>
<td>Introduction to Electricity and Electronics</td>
<td>3</td>
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</table>
# DEGREE (2/08)
**A.A. - Electronics Technician (09250.AA)**

For an Associate in Arts Degree in Electronics Technician, students must meet the graduation requirements and complete the following required courses.

Program Student Learning Outcomes

A. Develop a workforce with a broad understanding of theoretical and practical concepts in the electronics fields.
B. Cultivate independent-thinking, problem-solving workers who can work effectively both in teams and on their own.
C. Develop the lifelong learning skills necessary to think and to act competently in a complex, diverse, and constantly changing technologies.
D. Develop a workforce with an understanding of the workplace skills required in electronics industries.

### Units

**DRFT-04A** Fundamentals of Computer-Aided Drafting...........3
**ELCT-30** Exploring the World of Electricity and Electronics....3
**ELCT-31** Direct Current and Alternating Current Circuits........5
**ELCT-31SL** DC/AC Electronic Circuits Software Lab.............1
**ELCT-32** Semiconductors and Integrated Circuits.............5
**ELCT-32SL** Semiconductors and Integrated Circuits Software Lab.............2
**ELCT-34** Digital Logic Circuits and Systems.............3
**ELCT-34SL** Digital Logic Circuits and Systems Software Lab.....1
**ELCT-35** Microcontrollers, Programming, and Interfacing with Robotics Applications..............................................4
**ELCT-36** Networking Topologies and Cabling..............3
**ELCT-43A** Industrial Instrumentation and Process Control......3
**ELCT-43B** Graphical Programming for Electronics Data Acquisition.................................................................1.5
**ELCT-44** Electronic Shop Practices: Fabrication, Soldering, Rework, and Equipment Repair..........................3
**ELCT-51A** PC Configuration, Assembly & Repair...............3

35.5-37.5

### DEGREE (2/08)
**A.A. - Instrumentation and Process Control Technology (09650.AA)**

For an Associate in Arts Degree in Instrumentation and Process Control Technology, students must meet the graduation requirements and complete the following required courses.

Program Student Learning Outcomes

A. Exhibit the ability to communicate effectively in accomplishing job related tasks.
B. Demonstrate field related entry level theoretical and practical skills.
C. Recognize an appreciation for life-long learning.
D. Employ the principles of job related safety requirements.

### Units

**ELCT-30** Exploring the World of Electricity and Electronics....3
**ELCT-31** Direct Current and Alternating Current Circuits........5
**ELCT-31SL** DC/AC Electronic Circuits Software Lab.............1
**ELCT-32** Semiconductors and Integrated Circuits.............5
**ELCT-32SL** Semiconductors and Integrated Circuits Software Lab.............2
**ELCT-34** Digital Logic Circuits and Systems.............3
**ELCT-34SL** Digital Logic Circuits and Systems Software Lab.....1
**ELCT-35** Microcontrollers, Programming, and Interfacing with Robotics Applications..............................................4
**ELCT-36** Networking Topologies and Cabling..............3
**ELCT-41** Power Transmission..................................3

**DEGREE (2/08)**
**A.A. - Industrial Electronics Technology (09500.AA)**

For an Associate in Arts Degree in Industrial Electronics Technology students must meet the graduation requirements and complete the following required courses.

Program Student Learning Outcomes

A. Provide instructional theory and practical skills training to students for entering into workforce or upgrade the needed skills for working individuals, to install, diagnose, troubleshoot and maintain industrial electronics equipment.
B. Enhance students experiences gained through theory, laboratory and shop work activities to understand Programmable Logic Controllers, motors, industrial sensors complex automated systems.
C. Develop the lifelong learning skills necessary to think and to act competently in a complex, diverse, and constantly changing technologies.
D. Train students to understand safety codes and regulations applied to usage of industrial equipment and industrial working environment.

### Units

**ELCT-30** Exploring the World of Electricity and Electronics....3
**ELCT-31** Direct Current and Alternating Current Circuits........5
**ELCT-31SL** DC/AC Electronic Circuits Software Lab.............1
**ELCT-32** Semiconductors and Integrated Circuits.............5
**ELCT-32SL** Semiconductors and Integrated Circuits Software Lab.............2
**ELCT-34** Digital Logic Circuits and Systems.............3
**ELCT-34SL** Digital Logic Circuits and Systems Software Lab.....1
**ELCT-35** Microcontrollers, Programming, and Interfacing with Robotics Applications..............................................4
**ELCT-36** Networking Topologies and Cabling..............3
**ELCT-41** Power Transmission..................................3

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**2012-2013 CATALOG**
CERTIFICATE (2/09)
Computer and Networking Technology
(09040.CT)

A Certificate of Achievement may be earned by the successful completion of the options listed below. A student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes
A. Exhibit the ability to communicate effectively in accomplishing job related tasks.
B. Demonstrate field related entry level theoretical and practical skills.
C. Recognize an appreciation for life-long learning.
D. Employ the principles of job related safety requirements.

ELCT-30 Exploring the World of Electricity and Electronics......3
or
ELCT-31 Direct Current and Alternating Current Circuits......5
ELCT-31SL DC/AC Electronic Circuits Software Lab..........1
ELCT-32 Semiconductors and Integrated Circuits........5
ELCT-32SL Semiconductors and Integrated Circuits Software Lab ..............................................................2
ELCT-33 Digital Logic Circuits and Systems..................3
ELCT-34 Digital Logic Circuits and Systems Software Lab..1
ELCT-36 Networking Topologies and Cabling..................3
ELCT-40A Networking for Home and Small Businesses......3
ELCT-40B Working at a Small-to-Medium Business or ISP ...3
ELCT-40C Routing and Switching in the Enterprise........3
ELCT-40D Designing and Supporting Computer Networks...3
ELCT-44 Electronic Shop Practices: Fabrication, Soldering, Rework, and Equipment Repair .....................3
ELCT-51A Personal Computer Configuration, Assembly and Repair .................................................................3
ELCT-51B A+ Certification Training ................................3
INDT-38 Industrial Technology Computer Applications and Literacy ..................................................3

39.5-41.5

CERTIFICATE (2/09)
Electronics Technician
(09250.CT)

A Certificate of Achievement may be earned by the successful completion of the courses listed below. For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes
A. Develop a workforce with a broad understanding of theoretical and practical concepts in the electronics fields.
B. Cultivate independent-thinking, problem-solving workers who can work effectively both in teams and on their own.
C. Develop the lifelong learning skills necessary to think and to act competently in a complex, diverse, and constantly changing technologies.
D. Develop a workforce with an understanding of the workplace skills required in electronics industries

DRFT-04A Fundamentals of Computer-Aided Drafting........3
ELCT-30 Exploring the World of Electricity and Electronics....3
or
ELCT-31 Direct Current and Alternating Current Circuits......5
ELCT-31SL DC/AC Electronic Circuits Software Lab..........1
ELCT-32 Semiconductors and Integrated Circuits........5
ELCT-32SL Semiconductors and Integrated Circuits Software Lab ..............................................................2
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ELCT-36 Networking Topologies and Cabling..................3
ELCT-43A Industrial Instrumentation and Process Control ....3
ELCT-43B Graphical Programming for Electronics Data Acquisition .................................................................1.5
ELCT-44 Electronic Shop Practices: Fabrication, Soldering, Rework, and Equipment Repair .....................3
ELCT-51A PC Configuration, Assembly & Repair ................3

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CERTIFICATE
Electrical Technology
(09200.CT)

A Certificate of Achievement will be awarded upon the satisfactory completion of a minimum of 30 units of course work listed below. For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes
A. Exhibit the ability to communicate effectively in accomplishing job related tasks.
B. Demonstrate field related entry level theoretical and practical skills.
C. Recognize an appreciation for life-long learning.
D. Employ the principles of job related safety requirements.

DRFT-44 Print Reading and Sketching...............................3
ELCT-30 Exploring the World of Electricity and Electronics....3

35.5-37.5

Units

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or

ELCT-31 Direct Current and Alternating Current Circuits......5
or
ELCT-52 Introduction to Electricity and Electronics ..........3
ELCT-41 Industrial Motor and Equipment Control..............3
ELCT-42A Principles and Applications of Programmable Logic Controllers ..................................................2
ELCT-47 Electrical Motors, Generators, Transformers, and AC Distribution ....................................................3
ELCT-55 A-Z Electrical Conduit Bending Theory and Techniques 1
INDT-36 A-Z Electrical Wiring ......................................3
INDT-49 A-Z Electrical Codes and Ordinances................3
WELD-06 Oxy-Fuel Welding and Shielded Metal Arc Welding...3

Plus six units from the following electives:

INDT-10 Industrial Technical Skills ..................................3
INDT-25 Fluid Power ....................................................3
INDT-41 Power Transmission ..........................................3
INDT-51 Ventilation & Air Conditioning Systems ................3

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INDT-25 Fluid Power ...............................................................3
INDT-36 A-Z Electrical Wiring ......................................3
INDT-49 A-Z Electrical Codes and Ordinances................3
WELD-06 Oxy-Fuel Welding and Shielded Metal Arc Welding...3

Plus six units from the following electives:

INDT-10 Industrial Technical Skills ..................................3
INDT-25 Fluid Power ....................................................3
INDT-41 Power Transmission ..........................................3
INDT-51 Ventilation & Air Conditioning Systems ................3

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CERTIFICATE
Industrial Electronics Technology (09500.CT)

A Certificate of Achievement will be awarded upon the satisfactory completion of the 42 units of course work listed below. For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes
A. Provide instructional theory and practical skills training to students for entering into workforce or upgrade the needed skills for working individuals, to install, diagnose, troubleshoot and maintain industrial electronics equipment.
B. Enhance students experiences gained through theory, laboratory and shop work activities to understand Programmable Logic Controllers, motors, industrial sensors complex automated systems.
C. Develop the lifelong learning skills necessary to think and to act competently in a complex, diverse, and constantly changing technologies.
D. Train students to understand safely codes and regulations applied to usage of industrial equipment and industrial working environment.

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CERTIFICATE
Instrumentation and Process Control Technology (09650.CT)

A Certificate of Achievement will be awarded upon the satisfactory completion of the 41.5 units of course work listed below. For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes
A. Exhibit the ability to communicate effectively in accomplishing job related tasks.
B. Demonstrate field related entry level theoretical and practical skills.
C. Recognize an appreciation for life-long learning.
D. Employ the principles of job related safety requirements.

Units

<table>
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<tr>
<th>Course</th>
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<td>ELCT-30 Exploring the World of Electricity and Electronics</td>
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<td>ELCT-31 Direct Current and Alternating Current Circuits</td>
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<tr>
<td>ELCT-31A DIRECT CURRENT CIRCUITS (FOUNDATIONS OF ELECTRONICS)</td>
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<tr>
<td>ELCT-32A SEMICONDUCTORS AND INTEGRATED CIRCUITS SOFTWARE LAB</td>
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<td>ELCT-32B Programmable Logic Controllers</td>
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<td>ELCT-33 Digital Logic Circuits and Systems</td>
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<tr>
<td>ELCT-34 Digital Logic Circuits and Systems Software Lab</td>
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<tr>
<td>ELCT-35 Microcontrollers, Programming, and Interfacing with Robotics Applications</td>
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<tr>
<td>ELCT-41 Industrial Motor and Equipment Control</td>
<td>3</td>
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<tr>
<td>ELCT-42A Programmable Logic Controllers</td>
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<tr>
<td>ELCT-42B Advanced Topics in PLC Programming</td>
<td>1</td>
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<td>ELCT-43A Industrial Instrumentation and Process Control</td>
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<td>ELCT-43B Graphical Programming for Electronics Data</td>
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<td>ELCT-44 Fabrication, Soldering, and Equipment Repair</td>
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<td>ELCT-47 Electrical Motors, Generators, Transformers and AC Distribution</td>
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<tr>
<td>INDIT-25 Electrical Conduit Bending Theory and Techniques</td>
<td>1</td>
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<tr>
<td>INDIT-26 Fluid Power</td>
<td>2</td>
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</tbody>
</table>
ELCT-31B ALTERNATING CURRENT CIRCUITS (FOUNDATIONS OF ELECTRONICS)
3 units: 1.5 hours lecture, 4.5 hours lab.
Prerequisite: ELCT-31A. Advisories: ENGL-85; MATH-80 or MATH 83.
This is a course in AC electronics/electricity that investigates the behavior of resistance, inductance, and capacitance in alternating current circuits, including transformer action and AC test equipment. Also covered are AC circuit construction techniques and the utilization of electronic equipment in circuit construction and troubleshooting. The use of circuit simulation software for alternating current circuit analysis is an integral part of this course. (3/00)

ELCT-32 SEMICONDUCTORS AND INTEGRATED CIRCUITS (FOUNDATIONS OF ELECTRONICS)
5 units: 2 hours lecture, 9 hours lab.
Prerequisite: ELCT-31. Advisories: ENGL-85; MATH-80.
This course introduces students to fundamentals of semiconductor devices and analog integrated circuits. The course covers circuit analysis of diodes, BJTs, FETs, and MOSFETs transistors with emphasis on their practical applications as rectifiers, single and multiple stage amplifiers, oscillators and power amplifiers. Integrated circuits as operational amplifiers, timers, instrumentation amplifiers, active filters, digital-to-analog (ADC) and analog-to-digital (DAC) converters are also covered. Laboratory activities equip students with real job skills in the utilization of various electronic test equipment during circuit construction and troubleshooting. (3/06)

ELCT-32SL SEMICONDUCTORS AND INTEGRATED CIRCUITS SOFTWARE LAB
2 units: 6 hours lab.
This course is designed to supplement the electronics course ELCT-32 but can be taken concurrently or after ELCT-32 by any student desiring instruction in the use of computer-aided instruction (CAI) software for semiconductors and integrated circuits, circuit simulation, and virtual instrumentation. (3/06)

ELCT-34 DIGITAL LOGIC, CIRCUITS, AND SYSTEMS (FOUNDATIONS OF ELECTRONICS)
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
The course covers the theory of digital logic circuits and systems. Analog and digital conversion circuits, number systems and codes, Boolean algebra, Karnaugh maps, logic gates, counters, multi-vibrators, registers, decoders, counters, memories, and clock and timing circuits are also studied. Programmable logic devices and microprocessors will be introduced. (3/06)

ELCT-34SL DIGITAL LOGIC CIRCUITS AND SYSTEMS SOFTWARE LAB
1 unit: 3 hours lab.
One-way corequisite: ELCT-34. Advisory: ENGL-85.
This course is designed to supplement digital electronics course ELCT-34 but can be taken by any student desiring instruction in use of computer-aided instruction (CAI) software for digital logic circuit and digital system simulation and virtual instrumentation. The course may be repeated once. (3/06)

ELCT-35 MICROCONTROLLERS, PROGRAMMING, AND INTERFACING WITH ROBOTICS APPLICATIONS (FOUNDATIONS OF ELECTRONICS)
4 units: 2 hours lecture, 6 hours lab.
Prerequisite: ELCT-34. Advisory: ENGL-85.
This course covers basic constructing and programming 8-bit Programmable Intelligent Computer (PICmicro) microcontrollers found in computerized systems with emphasis on robotics applications. Characteristics, capabilities, and limitations of other microcontrollers are discussed. RISC (Reduced Instructions Set Computing), hardware structure, programming, and interfacing methods are also covered. (3/06)

ELCT-36 NETWORKING TOPOLOGIES AND CABLING (FOUNDATIONS OF ELECTRONICS)
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
This is a course designed to provide the student with information and knowledge to prepare for the industry-standard Building Industry Consulting Service International (BICSI) Register installer. Level I exam, and employment as a telecommunications cabling installer. Students will gain an understanding of the cabling industry, U.S. and international standards, basic networking, signal transmission, copper cabling, fiber optics, installation, safety, structured cabling system basics, cable management, cable testing, and emerging technologies. Students will also be prepared to read network design documentation, architectural blueprints, set up part lists, purchase components, pull and mount cable, choose wiring closets, install jacks, and perform cable testing. This course is repeatable three times. (3/06)

ELCT-40A NETWORKING FOR HOME AND SMALL BUSINESSES (Also: CPSC-40A)
[CI-CL areas A,C,E]
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-81, ENGL-84; MATH-80.
This curriculum helps students develop the skills needed to obtain entry-level networking jobs. It provides a hands-on approach to networking education that allows students to gain practical experience working on PC’s, their components and applications. Students complete instructional labs to understand the general theory needed to build networks and connect them to the internet. Basic security and wireless concepts are covered. It is for students with basic PC usage skills. (1/09)

ELCT-40B WORKING AT A SMALL-TO-MEDIUM BUSINESS OR ISP (Also: CPSC-40B)
[CI-CL areas A,C,E]
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ELCT-40A.
This course prepares students for jobs as network technicians. It also helps students develop additional skills required for computer technicians and help desk technicians. It provides a basic overview of routing and remote access, addressing, and security. It also familiarizes students with servers that provide e-mail services, Web space, and authenticated access. Students also learn about soft skills required for help desk and customer service positions. Network monitoring and basic troubleshooting skills are taught in context. (1/09)

ELCT-40C ROUTING AND SWITCHING IN THE ENTERPRISE (Also: CPSC-40C)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ELCT-40B.
This course familiarizes students with the equipment applications and protocols installed in enterprise networks, with a focus on switched networks, IP Telephony requirements, and security. It also introduces advanced routing protocols such as Enhanced Interior Gateway Routing Protocol (EIGRP) and Open Shortest Path First (OSPF) Protocol. Hands-on exercises include configuration, installation, and troubleshooting. (1/09)

ELCT-40D DESIGNING AND SUPPORTING COMPUTER NETWORKS (Also: CPSC-40D)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ELCT-40C.
This course introduces students to network design processes using two examples; a large stadium enterprise network and a medium-sized film company network. Students follow a standard design process to expand and upgrade each network, which includes requirements gathering, proof-of-concept, and project management. Lifecycle services, including upgrades, competitive analyses, and system integration, are presented in the context of pre-sale support. In addition to the Packet Tracer and lab exercises found in the previous courses, there are many pen-and-paper and role-playing exercises that students complete while developing their network upgrade proposals. (1/09)
ELCT-41  INDUSTRIAL MOTOR AND EQUIPMENT CONTROL  
(APPLICATIONS OF ELECTRONICS)  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84; ELCT-31 or ELCT-52.  
This course is designed to present the principles and applications of electrical motor and equipment control techniques used in industry. Ladder logic diagrams, contactors, motor starters, and electronic controls and sensors are among the subjects to be studied. Lectures, demonstrations, and laboratory experiments will be the methods used to present and enrich the material to be learned. (01/07)  

ELCT-42A PRINCIPLES AND APPLICATIONS OF PROGRAMMABLE LOGIC CONTROLLERS (APPLICATIONS OF ELECTRONICS)  
2 units: 1 hour lecture, 3 hours lab.  
Advisories: ELCT 41; ENGL-81, ENGL-84.  
This course provides electrical and industrial electronic students with basic skills and technical exposure to programmable logic controllers (PLCs). The subjects studied include terminology, programming methods, and operation of the programmable logic controller. The students will program and operate modern PLCs as a part of laboratory assignments. (5/07)  

ELCT-42B ADVANCED TOPICS IN PLC PROGRAMMING  
(APPLICATIONS OF ELECTRONICS)  
2 unit: 1 hour lecture, 3 hours lab.  
Advisory: ELCT-42A.  
This course provides exposure to advanced industrial Programmable Logic Controllers (PLC). The course is addressed to electrical and industrial electronic students interested in understanding and programming Allen Bradley types of PLC. The subjects studied include terminology, hardware configuration, programming methods, and operation of modern programmable logic controller. The students will learn how to set up a PLC and develop various industry-like programs as a part of laboratory assignments. (2/08)  

ELCT-43A INDUSTRIAL INSTRUMENTATION AND PROCESS CONTROL (APPLICATIONS OF ELECTRONICS)  
3 units: 2.5 hours lecture, 1.5 hours lab.  
Advisories: ELCT-31 or ELCT-31B or ELCT-52; ENGL-85.  
This course is designed to study instrumentation sensors and controls that are used in industrial process control and automation. The course includes the study of the principles of operation and the practical applications of instrumentation in industry. Topics such as decibels, micro-controllers, levers, friction, clutches and brakes, tooth rotor tachometers, vision sensors, dynamic braking of DC motors, and flux vector AC drives will be addressed. (2/02)  

ELCT-43B GRAPHICAL PROGRAMMING FOR ELECTRONICS DATA ACQUISITION  
1.5 units: 0.5 hours lecture, 3 hours lab.  
Advisories: CPSC-01; ELCT-43A; MATH-C or MATH-D (preferred).  
This course is designed to teach the basic functionality of analysis and instrumentation programming software using National Instruments graphics software package, LabVIEW®. This software not only reinforces basic scientific, mathematical, and engineering principles but also provides students with theoretical knowledge necessary to develop their own instrumentation and data acquisition solutions. LabVIEW® is a real-world, hands-on experience in graphical programming for industrial and scientific applications. (2/02)  

ELCT-44 ELECTRONIC SHOP PRACTICES: TECHNIQUES OF FABRICATION, SOLDERING, REWORK AND EQUIPMENT REPAIR  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84.  
This course provides students with a basic understanding of the fabrication, soldering, rework, and repair techniques necessary to prepare them for entry-level employment in the fields of electronic fabrication, assembly, and repair. There will be emphasis on techniques needed for a broad range of non-destructive electronic repairs once the diagnostic procedures have been completed. This course emphasizes techniques commonly used in industry. (2/02)  

ELCT-47 ELECTRICAL MOTORS, GENERATORS, TRANSFORMERS, AND AC DISTRIBUTION (APPLICATIONS OF ELECTRONICS)  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ELCT-31 or ELCT-52, ELCT-41; ENGL-81, ENGL-84.  
This course covers principles of AC and DC motors, generators, transformers, three-phase generation, and AC distribution systems. The course content will include lecture, demonstration, and laboratory projects using motors and transformers. (01/07)  

ELCT-51A PERSONAL COMPUTER CONFIGURATION, ASSEMBLY AND REPAIR  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84.  
This is a course addressed to students with any previous knowledge of personal computers (PC). The course introduces students to the fundamentals of desktop computer installation through simple, step-by-step instruction based on the most recent CompTIA A+® exam objectives. The course will cover the basic principles of PC operation, maintenance and troubleshooting techniques through various hands-on activities. (2/08)  

ELCT-51B A+ CERTIFICATION TRAINING  
[CILC area A]  
3 units: 2 hours lecture, 3 hours lab.  
Advisory: ELCT-51A.  
This course provides the electronics student with advanced knowledge of the system hardware and software available for personal computers (PCs). The course will cover the principles of operation, standards for maintaining compatibility between computer systems, the use of advanced diagnostic software and hardware, various types of operating systems, and standard troubleshooting techniques. The course will also cover networking principles, and software and hardware as they apply to the personal computer. (3/01)  

ELCT-52 INTRODUCTION TO ELECTRICITY AND ELECTRONICS  
3 units: 2.5 hours lecture, 1.5 hours lab.  
Advisories: ENGL-81, ENGL-84; MATH-80.  
This is an introductory course in basic electronics/electricity theory and covers resistance, inductance, capacitance in the series, parallel, and series-parallel circuits with DC and AC power sources. Circuit analysis is accomplished through basic circuit formulas according to Ohm’s and Kirchoff’s laws. Fundamentals of magnetism, DC and AC motors, diodes, transistors and integrated circuits, and the utilization of basic test equipment in electrical circuit construction and troubleshooting are also covered. (3/06)  

ELCT-55A-Z ELECTRICAL CONDUIT BENDING THEORY AND TECHNIQUES  
1 unit: 0.5 hour lecture, 1.5 hours lab.  
Advisories: ENGL-81, ENGL-84; MATH-B.  
This course provides a comprehensive overview of conduit bending, fabrication procedures and methods. It will develop basic competencies in electrical apprentices and beginning learners. It will discuss hand bending for 90° bends, offsets and kicks, saddles and corner offsets, segmented bends, threaders, benders and other conduit types. These conduit types will include electrical metallic tubing (EMT), galvanized rigid conduit (GRC), rigid aluminum, intermediate metallic conduit (IMC), various polyvinyl chloride (PVC), and flexible plastic and metallic conduit. Wiring in accordance with the National Electrical Code (NEC) will be stressed. (5/07)  

ELCT-71A-Z ELECTRONICS/INDUSTRIAL ELECTRONICS TECHNOLOGY SPECIAL TOPICS  
0.5 - 4 units: 1.5 - 12 hours lab.  
Prerequisite/Advisory: None.  
This course is the study of principles, processes, and theories of the special topic being presented. (3/96)
Emergency Medical Care
Allied Health, Business, and Public Safety

CERTIFICATE Emergency Medical Technician

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address: https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Career Opportunities
This certificate leads to potential employment with ambulance providers, fire departments, police departments, hospitals, doctor’s offices and private companies who require on-site emergency medical responders. Many who enter at the EMT level also choose to continue their education toward an advanced health care profession.

Web site www.mccd.edu/alliedhealth/

CERTIFICATE (12/10) Emergency Medical Technician (12100.CO)

This program is designed to provide the education and training for individuals interested in sitting for the National Registry of Emergency Medical Technicians (NREMT) exam and obtaining Emergency Medical Technician certification. Upon receipt of this certificate, students are then eligible for an entry level position as an EMT

Program Student Learning Outcomes
A. Demonstrate an understanding of all facets of basic life support according to state and national standards, to include assessment, emergency treatment, and equipment operation.
B. Effectively communicate patient details to base hospital emergency department personnel.
C. Successfully pass the National Registry of Emergency Medical Technicians (NREMT) exam.

Advisories: ENGL-84; ALLH-67; a first aid course equivalent to the course offered by the Red Cross.

ALLH-50 and ALLH-51 should be taken concurrently in order to verify that the student has met all EMT I course requirements.

ALLIED HEALTH (ALLH)

ALLH-50 EMERGENCY MEDICAL TECHNICIAN I
6 units: 5 hours lecture, 3 hours lab.
Limitation on enrollment: Negative TB skin test or negative chest x-ray for TB within the last four years; a CPR course based on American Red Cross or American Heart Association that includes one- and two-rescuers CPR plus infant CPR. Advisories: ALLH-67; ENGL-84; a first-aid course equivalent to the course offered by the American Red Cross.

This beginning course is designed to teach basic emergency medical procedures and responsibilities, including stabilization of the sick and injured for transportation to medical facilities, care during transport, communication with base-hospital personnel, and transfer of the injured to the base-hospital emergency room. This course meets the requirements of Title 22, Division of California Administrative Code. Students successfully completing ALLH-50 and ALLH-51 are eligible to take the EMT I certifying exam from any EMS Agency within the State of California. It is recommended that the student take ALLH-50 and ALLH-51 concurrently.

ALLH-51 EMERGENCY MEDICAL TECHNICIAN I, AMBULANCE
1 unit: 18 total hours lecture, plus 8 hours of field experience.
Limitation on enrollment: Valid California driver’s license; negative TB skin test or negative chest x-ray for TB; a CPR course based on American Red Cross or American Heart Association that includes one- and two-rescuer CPR plus infant CPR. Two-way corequisite: ALLH-50. Advisories: ALLH-67; ENGL-84; First Aid: Be able to perform first aid based on the course offered by the Red Cross or its equivalent a) recognize when emergency has occurred; b) follow emergency action steps in any emergency; c) provide basic care for injury and or sudden illness until the victim can receive professional medical help.

This course provides the ambulance module of the EMT I certification program. Topics for the course include the roles and responsibilities of ambulance personnel, legal aspects of ambulance operation, ambulance communications, maintenance of medical equipment and supplies, driver licensing requirements. This course with ALLH-50 satisfies the California Administrative Code requirements for eligibility for certification as an EMT I. (11/09)

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<tr>
<td>6</td>
<td>Emergency Medical Technician I,.........................</td>
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<td>1</td>
<td>Emergency Medical Technician I, Ambulance.............</td>
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These courses meet the requirements of Title 22, Division 9, Chapter 2 of California Administrative Code. Students successfully completing the courses are eligible to take the EMT-1 certifying exam from the National Registry of Emergency Medical Technicians.

Limitations on enrollment for both ALLH-50 and ALLH-51:
Participants must have a current CPR card based on American Red Cross or American Heart Association that includes one- and two-rescuer CPR plus infant CPR; negative TB skin test or negative chest X-ray for TB.
DEGREES
A.A. - Engineering
A.S. - Engineering
A.S. - Engineering Technology

Program Description
Widely diversified professional engineering programs are available at California universities. Merced College offers the first two years of engineering to prepare students for transfer at the junior class level into a bachelor’s degree program.

Students must be aware that completion of the course selection does not necessarily satisfy all lower division requirements as specified by the Engineering Liaison Committee. The program is listed in such a way as to permit sufficient flexibility for students transferring to a variety of institutions. Students must work closely with their counselors to assure a smooth transition to the four-year institution of their choice.

Engineering Technology is that part of the technological field which requires the application of scientific and engineering knowledge and methods combined with technical skills in support of engineering activities; it lies in the occupational spectrum between the craftsman and the engineer.

Engineering Technology prepares the student for junior class standing at California State University at Pomona, San Jose, San Luis Obispo, and Sacramento, and Northrop Institute of Technology in most specialized fields of engineering technology. This program leads to a Bachelor’s in Science Degree and classification as an engineering technologist.

DEGREE
A.A. - Engineering (09300.AA)

An Associate in Arts Degree in Engineering is designed for students investigating the area of engineering and who have sufficient units to graduate but lack specific prerequisites to advance to junior class standing in engineering. It must be noted that an A.A. in engineering does not necessarily satisfy entry requirements to four-year engineering curricula.

For an A.A. Degree in Engineering, students must meet the graduation requirements, and complete 18 units from the courses listed below.

Program Student Learning Outcomes
A. Understand the physical and mechanical principles required in engineering analyses.
B. Apply these principles and techniques to systems of importance in engineering.
C. Identify the material properties that must be optimized of a candidate material for particular applications by analyzing its composition and structure.
D. Compare and contrast the different fields of engineering.
E. Make an appropriate use of available technology.

Complete 5 to 8 units from the following:
- ENGR-10 Engineering Materials ...............................................3
- ENGR-15 Elementary Mechanics (Statics).................................3
- ENGR-30 Introduction to Engineering ........................................2

Complete the remaining 10 to 13 units from the following courses:
- CHEM-04B General Chemistry ....................................................5
- ENGR-12 FORTRAN Programming ..........................................3
- ENGR-14 C++ Programming .......................................................3
- ENGR-25 Descriptive Geometry ................................................3
- MATH-04B Calculus II .................................................................4
- MATH-04C Multivariable Calculus ..............................................4
- MATH-06 Elementary Differential Equations ................................3
- MATH-08 Linear Algebra .............................................................3
- PHYS-04A Physics ......................................................................4
- PHYS-04B Physics ......................................................................4
- PHYS-04C Physics ......................................................................4
- PHYS-04D Physics ......................................................................4

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DEGREE (A.S.)
A.S. - Engineering (09300.AS)

For an Associate in Science Degree in Engineering, students must meet the graduation requirements (MATH-04A, CHEM-04A, and a life science course are suggested to satisfy breadth requirements in the science area) and complete the courses listed below.

Program Student Learning Outcomes
A. Demonstrate understanding of the physical, mechanical, and electrical principles required in engineering analyses.
B. Apply these principles and techniques to systems of importance in engineering.
C. Identify the material properties that must be optimized of a candidate material for particular applications by analyzing its composition and structure.
D. Solve mathematical problems applied in engineering analyses.

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<tr>
<td>ENGR-10 Engineering Materials</td>
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<tr>
<td>ENGR-15 Elementary Mechanics (Statics)</td>
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<tr>
<td>ENGR-18 Electrical Circuits Analysis</td>
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<tr>
<td>ENGR-30 Introduction to Engineering</td>
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<tr>
<td>MATH-04B Calculus II</td>
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<tr>
<td>MATH-04C Multivariable Calculus</td>
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<td>MATH-06 Differential Equations</td>
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<tr>
<td>CHEM-04B General Chemistry</td>
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<tr>
<td>ENGR-12 FORTRAN Programming</td>
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<tr>
<td>or ENGR-14 C++ Programming</td>
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<td>ENGR-25 Descriptive Geometry</td>
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<td>MATH-08 Linear Algebra</td>
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<tr>
<td>PHYS-04A Physics</td>
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<td>PHYS-04B Physics</td>
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<td>PHYS-04C Physics</td>
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A minimum of seven additional units from the following list of courses is required for an A.S. Degree. Care should be taken in selecting courses appropriate to the area of engineering, and the student’s intended transfer institution.

Suggested electives include:
ENGR-30 Introduction to Engineering
MATH-02 Precalculus
PHYS-04A Physics

Additional units can be taken as breadth and/or elective courses.

Suggested Sequence: A.A. - Engineering (09300.AA)
Additional units can be taken as breadth and/or elective courses.

Suggested Sequence: A.S. - Engineering Technology (09350.AS)
Additional units can be taken as breadth and/or elective courses.

DEGREE
A.S. - Engineering Technology (09350.AS)

For an Associate in Science Degree in Engineering Technology, students must meet the basic graduation requirements (PHYS-04A and a life science course should be taken for science breadth) and complete the 30-unit curriculum listed below.

Program Student Learning Outcomes
A. Demonstrate understanding of the physical, mechanical, and electrical principles required in engineering analyses.
B. Apply these principles and techniques to systems of importance in engineering.
C. Identify the material properties that must be optimized of a candidate material for particular applications by analyzing its composition and structure.
D. To become skilful with the mathematical expressions applied in engineering.
E. Solve and analyze graphical problems utilizing AutoCAD program.

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<tbody>
<tr>
<td>CHEM-04A General Chemistry</td>
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<tr>
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<tr>
<td>ELCT-31 Direct Current and Alternating Current Circuits</td>
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<tr>
<td>MATH-04A Calculus I</td>
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<tr>
<td>PHYS-04B Physics</td>
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<tr>
<td>MATH-02 Precalculus</td>
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<tr>
<td>PHYS-04A Physics</td>
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</tbody>
</table>

Suggested electives include:
ENGR-30 Introduction to Engineering
MATH-04A Calculus I
PHYS-04B Physics

Additional units can be taken as breadth and/or elective courses.

Suggested Sequence: A.S. - Engineering Technology (09350.AS)
Additional units can be taken as breadth and/or elective courses.

Suggested Sequence: A.S. - Engineering Technology (09350.AS)
Additional units can be taken as breadth and/or elective courses.

Suggested Sequence: A.A. - Engineering (09300.AA)
Additional units can be taken as breadth and/or elective courses.

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ENGINEERING (ENGR)

ENGR-05 ENGINEERING GRAPHICS (Also: DRFT-05)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: DRFT-04A. Advisories: ENGL-81, ENGL-84; MATH-80.
This course utilizes computer graphics to prepare engineering drawings including geometric constructions, multi-view drawing, sectioning, auxiliary views, pictorial drawing, and tolerancing. (2/10)

ENGR-10 ENGINEERING MATERIALS
3 units: 3 hours lecture.
Prerequisites: CHEM-04A; PHYS-04A. Advisory: ENGL-85.
This course is an introduction to the atomic and microscopic structure of modern engineering materials. The effects of structure and manufacturing processes on the mechanical, electrical, and other physical properties of materials are studied. Metals, alloys, ceramics, polymers, and composites are explored. (1/07)

ENGR-12 FORTRAN PROGRAMMING (Also: CPSC-12 and MATH-12)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: MATH-02, or MATH-25 and MATH-26. Advisory: ENGL-85.
This course teaches students to use the FORTRAN programming language to solve problems in a wide variety of areas. Programming design, problem-solving, and debugging techniques are emphasized throughout the course. (1/07)

ENGR-14 C++ PROGRAMMING (Also: MATH-14)
3 units: 2 hours lecture, 3 hours lab.
This is the entry-level comprehensive concepts course for computer science majors, and recommended for science and math majors. Algorithm design, logic diagrams, problem-solving, coding, and debugging are emphasized using a structured language such as C++. (1/07)

ENGR-15 ELEMENTARY MECHANICS (STATICS)
3 units: 3 hours lecture.
Prerequisite: PHYS-04A. One-way corequisite: MATH-04C. Advisory: ENGL-85.
This course is the study of rigid bodies when acted upon by forces and couples in 2-D and 3-D space. Included are trusses, frames, machines, beams, friction, centroids, centers of mass, and moments of inertia. (2/08)

ENGR-18 ELECTRICAL CIRCUITS ANALYSIS
4 units: 3 hours lecture, 3 hours lab.
Prerequisite: PHYS-04B. One-way corequisite: MATH-04C. Advisory: ENGL-85.
This course covers basic circuit analysis emphasizing resistive circuits, natural and forced response of inductive and capacitive circuits, phasor analysis, and semiconductor elements. Lab involves construction and measurement of circuits using power supplies, breadboards, multimeters, oscilloscopes, and function generators. (2/08)

ENGR-25 Descriptive Geometry (Also: DRFT-25)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: DRFT-04A. Advisory: MATH-02.
This course involves use of computer-aided drafting and hand sketching to solve problems and communicate ideas. The course is also an introduction to descriptive geometry, using computers and more traditional methods of problem solving through the auxiliary view and two-view methods. The development of graphical methods in their application to graphs, charts, and spatial and vector geometry will be studied. (2/10)
DEGREE
A.A. - English

Program Description
The English curriculum prepares the student in written and analytical skills and acquaints the student with a wide range of literature. An English major qualifies a student for employment in educational institutions, business and industry, and communications. It is a frequently recommended major for students interested in pre-law, journalism, or library work.

Career Opportunities
- Advertising
- Editor
- Interpreter
- Teacher
- Librarian
- Publisher
- Public Relations
- Attorney
- Columnist
- Manager
- Grant Writer
- Technical Writer
- Paralegal

Highlights
The English cohort offers its literature classes on a rotating schedule. If students carefully plan their course work, they should be able to take the classes necessary to earn an English degree in two years. Below is the schedule for the upcoming years:

Fall 2012: ENGL-03, ENGL-06A, ENGL-18
Spring 2013: ENGL-05, ENGL-06B, ENGL-08

Fall 2013: ENGL-04A, ENGL-10, ENGL-14
Spring 2014: ENGL-04B, ENGL-11, ENGL-07

Fall 2014: ENGL-03, ENGL-06A, ENGL-18
Spring 2015: ENGL-05, ENGL-06B, ENGL-08, ENGL-12

Some courses, such as ENGL-02 and ENGL-31, are scheduled by other departments. See the Area Dean or English Faculty Lead for more information.

DEGREE (2/10)
A.A. - English (15200.AA)

For all students admitted to a community college in Fall 2009 and thereafter, all courses that count toward the associate degree major or area of emphasis must be “satisfactorily completed” with grades of A, B, C or P (pass). All degree requirements, including general education, must be completed with an overall grade point average of 2.0 or better.

Program Student Learning Outcomes
A. Write a full-length essay of appointed number of words — most likely 1500-1750 words—relatively free from English usage errors, on any given subject.
B. Write a full-length documented essay using the MLA format and style (seventh ed.).
C. Read sophisticated material critically followed by writing critical or evaluative essays on the reading material.
D. Recognize literary periods and their distinguishing characteristics and show proficiency by way of exam, a series of exams or extensive writings.
E. Write full-length essays—most likely 1500-1750 words—on literary subjects from poetry, novels, or short stories.

Units

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<tr>
<th>Course</th>
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<td>ENGL-01B</td>
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<td>ENGL-03</td>
<td>The History of Dramatic Literature</td>
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<td>ENGL-04A</td>
<td>Introduction to World Literature: Ancients to 1650</td>
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<td>ENGL-04B</td>
<td>Introduction to World Literature: 1650 to Present</td>
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<td>Introduction to Fiction</td>
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<td>ENGL-06A</td>
<td>Major English Writers to the Late 18th Century</td>
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<td>ENGL-06B</td>
<td>Major English Writers Since the Late 18th Century</td>
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<td>ENGL-07</td>
<td>Studies in Literature - Poetry</td>
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<td>ENGL-08</td>
<td>Shakespeare</td>
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<tr>
<td>ENGL-10</td>
<td>American Literature - Beginnings to Civil War</td>
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<td>ENGL-11</td>
<td>American Literature - Civil War to Present</td>
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<td>ENGL-12</td>
<td>Creative Writing</td>
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<td>ENGL-13</td>
<td>Critical Reasoning and Writing</td>
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<td>PHIL-13</td>
<td>Critical Reasoning and Writing</td>
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<td>ENGL-14</td>
<td>Introduction to Film</td>
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<td>ENGL-18</td>
<td>African and African-American Literature</td>
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<td>ENGL-22</td>
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<td>ENGL-31</td>
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<td>ENGL-47</td>
<td>Special Topics in Language and Literature</td>
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Suggested electives to meet applicable A.A./A.S. Breadth Requirements:

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<td>ART-02</td>
<td>Art History: Renaissance Through 20th Century</td>
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<td>HIST-04AB</td>
<td>History of Civilization: Parts I &amp; II</td>
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<td>HUM-01</td>
<td>Studies in Humanities - Ancient Through Renaissance</td>
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<td>or</td>
<td>Honors Studies in Humanities - Ancient Through Renaissance</td>
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ENGLISH (ENGL)

ENGL-B INTRODUCTION TO APPLIED WRITING
3 units: 3 hours lecture.
Prerequisite: ENGL-81, ENGL-84. Advisory: LRNR-30.
This course is designed for students who desire to learn or polish skills in writing for the workplace or public arena. Writing assignments include reports, inter-office memos, public relations letters, public announcements, and other workplace documents for a variety of vocational occupations and public situations. (11/04)

ENGL-01A COLLEGE COMPOSITION AND READING
(CSU breadth area A2) (IGETC area 1A) [CILC area G]
4 units: 4 hours lecture.
Prerequisite: ENGL-85. Advisory: LRNR-30.
This course focuses on critical reading and thinking, research strategies, and scholarly composition with proper documentation at the college transfer level. Students write expository, analytical, and argumentative essays informed by assigned readings, discussion, and/or research. (2/12)

ENGL-01B INTRODUCTION TO LITERATURE
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A.
This course introduces representative works from four major genres: short story, novel, drama, and poetry. Students develop analytical and evaluative reading and writing skills while acquiring an appreciation for the cultural context and the aesthetic qualities of literature. Students read texts from various countries and periods in order to encourage an appreciation of literature’s range, artistry, and insight into the human experience. (2/12)

ENGL-02 ORAL INTERPRETATION (Also: COMM-02)
3 units: 3 hours lecture.
Prerequisite: ENGL-85.
This course is designed to help students understand, appreciate, and convey the power of the written word. A variety of writings will be analyzed in their rhetorical, historical, and cultural contexts and be brought to life through performance. (2/08)

ENGL-03 HISTORY OF DRAMATIC LITERATURE (Also: DRAM-03)
(CSU breadth area C1) (IGETC area 3A)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This course is a study of dramatic literature as a reflection of theater history, including the influence of staging, acting styles, scene design, and culture upon the playwright and his/her work. Classical to contemporary drama is examined. (11/04)

ENGL-04A INTRODUCTION TO WORLD LITERATURE: ANCIENTS TO 1650
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This course examines the origins and developments of world literatures and cultures from theancients to 1650 through various literary genres and cultural traditions. Primary focus will fall on major works of certain periods and of geographic origins. Students will engage in comparative analysis and evaluation of the literary works as well as close study of the works in addition to the study of each text’s merit. (3/12)

ENGL-04B INTRODUCTION TO WORLD LITERATURE: 1650 TO PRESENT
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This course examines the origins and subsequent developments of world literatures and cultures from 1650 to the present through various literary genres and cultural traditions. Primary focus will fall on major works of certain periods and of geographic origins. Students will engage in comparative analysis and evaluation of the literary works as well as close study of the works in addition to the study of each text’s merit. (5/05)

ENGL-05 INTRODUCTION TO FICTION
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This course traces the origins and subsequent developments of short fiction and longer fiction (novels), and signals the specific characteristics of respective genres. Students will read a number of books of short fiction and three to five novels in order to study the various developments of style, form, structure, and other artistic choices associated with the history of fiction. (12/04)

ENGL-06A MAJOR ENGLISH WRITERS TO THE LATE 18TH CENTURY
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This course introduces students to the history and variety of English literature from its beginnings to the late eighteenth century. Representative works of major authors are read as examples of the various genres, literary trends, and historical eras in which they were written. (2/12)
ENGL-06B MAJOR ENGLISH WRITERS SINCE THE LATE 18TH CENTURY
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This course introduces students to the history and variety of English literature from the late eighteenth through the twentieth, to the twenty-first centuries. Representative works of major authors are read as examples of the various genres, literary trends, and historical eras in which they were written. (2/12)

ENGL-07 STUDIES IN LITERATURE: POETRY
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This course traces origins and developments of the poem as a major literary genre. Assignments include an intensive study of the poetic process. Poems from ancient times to the present are analyzed in terms of form, idea, and language. (1/05)

ENGL-08 INTRODUCTION TO SHAKESPEARE
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
Introduction to Shakespeare is a course of literary analysis based on reading and studying the major works of William Shakespeare. The course focuses on a number of Shakespeare's plays, especially the most widely-known ones, from the categories Comedy, History, and Tragedy, as well as a survey of his non-dramatic poetry. As this course is an introductory course, students will receive the opportunity to learn about Elizabethan England -- the England of the time of Shakespeare. (12/04)

ENGL-10 AMERICAN LITERATURE FROM BEGINNINGS TO CIVIL WAR
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This course is designed to introduce students to the history and variety of literature from American Literature's beginnings to the Civil War. Representative works are read as examples of various genres, literary trends, and historical eras. (2/12)

ENGL-11 AMERICAN LITERATURE FROM POST-CIVIL WAR TO PRESENT
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This course is designed to introduce students to the history and variety of American literature from the end of the 1865 to the present. Representative works of major and influential authors are read as examples of various genres, literary movements, and historical eras. (2/12)

ENGL-12 CREATIVE WRITING
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
A course designed to provide experience in the writing of poetry, drama, fiction, and creative non-fiction and to aid the student in becoming aware of the craft of writing as described and/or demonstrated by professional writers. The class is conducted primarily as a workshop in which students read their works for constructive criticism. (3/12)

ENGL-13 CRITICAL REASONING AND WRITING (Also: PHIL-13)
(CSU breadth area A3) (IGETC area 1B) [CILC area G]
3 units: 3 hours lecture.
Prerequisite: ENGL-01A.
This course offers instruction in argumentative and critical writing, critical thinking, research strategies, information literacy, and proper documentation. Readings feature mostly non-fictional essays and books that reflect diverse cultural and gender perspectives on a variety of contemporary political and social issues, especially those involving race, ethnicity, and gender. ENGL-13/PHIL-13 meets the IGETC critical thinking/composition requirement. (3/12)

ENGL-13H HONORS CRITICAL REASONING AND WRITING (Also: PHIL-13H)
(CSU breadth area A3) (IGETC area 1B) [CILC area G]
3 units: 3 hours lecture.
Limitation on enrollment: Enrollment in the Honors Program. Prerequisite: ENGL-01A.
This course offers instruction in argumentative and critical writing, critical thinking, research strategies, information literacy, and proper documentation. Readings feature mostly non-fictional essays and books that reflect diverse cultural and gender perspectives on a variety of contemporary political and social issues, especially those involving race, ethnicity, and gender. ENGL-13/PHIL-13 meets the IGETC critical thinking/composition requirement. (3/12)

ENGL-14 INTRODUCTION TO FILM
(CSU breadth area C1) (IGETC area 3A)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: ENGL-01A. Advisory: ENGL-01A.
This course includes critical and popular approaches to film. Students will study film form, genre, style, criticism, and history. They will read screenplays and film criticism and theory and view the films under consideration to obtain a better understanding of the film discipline. (3/12)

ENGL-18 AFRICAN AND AFRICAN AMERICAN LITERATURE (Also: HUM-18)
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This is an introductory course in African literature written in English or translated from African languages or French into English. It will present a survey of major works from colonial and post-colonial literature to introduce students to African works of merit, cultural relevance, and universal application. In addition to enabling students to view African works within a global context, its goal will be to show the connection of themes, issues, and styles between African and African-American literature and experience as well. Works studied will include epics and narratives, poetry and song lyrics, short fiction, novels, essays, films, and drama in an effort to assist students in acquiring an appreciation of important literary voices that have heretofore been neglected in literature studies. (10/07)

ENGL-22 RESEARCH, COMPOSITION, AND BIBLIOGRAPHY
1 unit: 1 hour lecture.
Advisory: ENGL-85.
This course introduces students to the research and composing processes of the discipline-specific writing conventions of their fields. Students will be introduced to Internet search engines, library catalogs, indices, abstracts, bibliographies, reference books, and specialized sources. Research and writing include an annotated bibliography and an article-length essay. (11/04)

ENGL-31 CHILDREN'S LITERATURE
3 units: 3 hours lecture.
Prerequisite: ENGL-01A.
This course explores children's literature as a special topic of English literature. Students will read and write about children's literature, exploring a range of cultures for both literary elements and structural features. The class will identify themes derived from cultural patterns and symbols from rituals, mythologies, and traditions by identifying and evaluating structural and organizational devices in prose and poetry. Students will read various literary genres, including but not limited to novels, short stories, folk and fairy tales, and poetry. (5/05)

ENGL-47ABCD SPECIAL TOPICS IN LANGUAGE AND LITERATURE
(Also: HUM-47ABCD)
3 units: 3 hours lecture.
Prerequisite: ENGL-85.
This course engages students in the study of language and literature, and topics will vary from semester to semester. (1/05)
ENGL-80 FOUNDATIONS IN READING II
3 units: 3 hours lecture.
Prerequisite: ESL-92B or ENGL-90. Two-way corequisite: ENGL-80L. Advisory: Concurrent enrollment in ENGL-83.
This course is designed to improve basic reading skills, primarily comprehension. The course will emphasize the application of reading strategies to improve students' ability to read effectively at three levels below transfer. The course will stress vocabulary acquisition, literal and inferential comprehension, critical reading, and fluency. (2/11)

ENGL-80L FOUNDATIONS IN READING II LABORATORY
1 unit: 3 hours lab.
Prerequisite: ESL-92B and/or ENGL-90. Two-way corequisite: ENGL-80. Advisory: Concurrent enrollment in ENGL-83.
The reading lab is required of all students registered in ENGL-80. This course is designed to improve reading skills by providing individualized assistance through a prescriptive reading program and supplemental assignments, both of which include targeted readings three levels below transfer. (2/11)

ENGL-81 FOUNDATIONS IN READING III
3 units: 3 hours lecture.
Prerequisite: ENGL-80, ENGL-80L. Two-way corequisite: ENGL-81L. Advisory: Concurrent enrollment in ENGL-84.
This course is designed to improve a variety of reading comprehension skills and critical reading/thinking skills. The course will emphasize the application of reading strategies to improve students' ability to read effectively at two levels below transfer and advance to English 85, Foundations in Academic Literacy. The course will stress literal and inferential comprehension, critical reading, vocabulary acquisition and fluency. (2/11)

ENGL-81L FOUNDATIONS IN READING III LABORATORY
1 unit: 3 hours lab.
Prerequisite: ENGL-80, ENGL-80L. Two-way corequisite: ENGL-81. Advisory: Concurrent enrollment in ENGL-84.
The reading lab is required of all students registered in ENGL-81. This course is designed to improve reading skills by providing individualized assistance through a prescriptive reading program and supplemental assignments, both of which include targeted readings two levels below transfer. (2/11)

ENGL-83 FOUNDATIONS IN WRITING II
5 units: 5 hours lecture.
Prerequisite: ENGL-90 or ESL-92B. Advisory: Concurrent enrollment in ENGL-80, ENGL-80L.
This course focuses on developing short, unified written compositions (single to multi paragraph), basic English grammar, and sentence construction. The students construct short compositions with original sentences which demonstrate basic grammatical concepts and patterns of Standard Academic English. (2/11)

ENGL-84 FOUNDATIONS IN WRITING III
5 units: 5 hours lecture.
Prerequisite: ENGL-83. Advisory: Concurrent enrollment in ENGL-81, ENGL-81L.
This course focuses on developing short, unified essays through intensive practice in writing, including composition structure and paragraph development, application of English grammar and usage in conjunction with written work, as well as analysis of and response to relevant texts. (2/11)

ENGL-85 FOUNDATIONS IN ACADEMIC LITERACY
5 units: 4 hours lecture, 3 hours lab.
Prerequisite: ENGL-81 and ENGL-84
This course focuses on a process-based approach to writing essays, including an introduction to argumentation, and offers a review of grammar and English usage in conjunction with composition assignments. Reading assignments include a variety of subjects for class discussion and for fostering reading comprehension and analysis. An introduction to library research and source materials is integrated into the course. This course also includes assignments in a computer-based setting to practice and enhance reading and writing skills, including individualized instruction and assistance. (2/12)

ENGL-90 FOUNDATIONS IN READING AND WRITING I
4 units: 4 hours lecture.
Advisory: Upon entering the course it is recommended that the student be able to read commonly used words and sound out words of more than two syllables.
This course will introduce students to text-based reading and writing at four levels below transfer. Upon entry, students should be able to identify sight words and sound out unfamiliar words. Students will learn skills in order to increase vocabulary through context clues, to understand basic level appropriate texts, to think critically about those texts, and to respond in writing about their thinking at four levels below transfer. (2/11)
Program Description
This three-level ESL program helps students whose primary language is not English to acquire the English language skills and cultural awareness necessary to begin a program of study that prepares them to succeed in college level courses. Separate courses in grammar and linguistic competence, pronunciation and speaking, reading, and paragraph development prepare students to enter developmental reading and writing classes and do not count toward graduation. Because credit ESL courses begin on an intermediate level, it is recommended that students have three years of prior instruction in ESL, or speak, read, and write English regularly in their daily lives.

ENGLISH AS A SECOND LANGUAGE (ESL)
ESL-92A ESL READING AND WRITING 1
5 units: 5 hours lecture.
Advisory: Student has completed non-credit ESL Level 5 or at least three years of the study of ESL/ELD in high school or adult school program or Student 1) has the ability to use complete English sentences to carry on a conversation with a native speaker, 2) is able to read English magazines and newspapers, and 3) is able to write complete sentences (although they may have some grammatical errors).
This is an intermediate writing and reading course for students whose native language is not English (ESL). This course focuses on reading strategies to improve fluency, vocabulary, and comprehension. Students will write about reading by using a step-by-step process to compose well-ordered paragraphs. (12/09)

ESL-92B ESL READING AND WRITING 2
5 units: 5 hours lecture.
Prerequisite: ESL-92A.
This is an intermediate writing and reading course for students whose native language is not English (ESL). This course focuses on reading strategies to improve vocabulary development and comprehension. Students will write about reading by using a step-by-step process to compose well-ordered paragraphs and short essays with a variety of sentence structures. (12/09)

ESL-95 HIGH-INTERMEDIATE GRAMMAR I
3 units: 3 hours lecture.
Advisories: Upon entering the course it is recommended that the student be able to: Completion (with instructor recommendation) of Non-Credit ESL Level 5 and/or at least three full years of successful study of ESL/ELD in high school or adult school programs and (1) is able to conduct a conversation with a native speaker using both productive and receptive English language skills, and 2) is able to read English texts at the 500 lexile level or above and 3) is able to compose in writing coherent sentences in English (although they may have some grammatical, semantic and spelling errors).
This is a high-intermediate ESL grammar course for students whose native language is not English or for bilingual speakers of English who have not gained mastery of English verbs and their use in the spoken or written context. Focusing on verbs and verb structures in written and spoken contexts, this course deals with simple and compound verb tenses, irregular past tense verb forms, aspects and moods (conditionals), the passive voice, and phrasal verbs. It is recommended that this course be taken concurrently with ESL-92A and ESL-98. (12/11)

ESL-96 HIGH-INTERMEDIATE GRAMMAR II
3 units: 3 hours lecture.
Advisory: Completion (with instructor recommendation) of Non-Credit ESL Level 5 and/or at least three full years of successful study of ESL/ELD in high school or adult school programs and (1) is able to conduct a conversation with a native speaker using both productive and receptive English language skills, and 2) is able to read English texts at the 500 lexile level or above and 3) is able to compose in writing coherent sentences in English (although they may have some grammatical, semantic and spelling errors).
This is a high-intermediate English grammar course (ESL) for students whose native language is not English or for bilingual speakers of English who have not gained mastery of English grammar. Focusing on the sentence, this course deals with the use of gerunds and infinitives, adjective and adverbial clauses, and modals. It also involves grammar and pragmatics at the sentence level for the purpose of issuing commands, requests, and invitations, using direct and indirect speech, and creating embedded questions. It is recommended that this course be taken concurrently with ESL-92B. (12/11)

ESL-98 ESL PRONUNCIATION AND SPEAKING
3 units: 3 hours lecture.
Advisories: Completion of non-credit ESL Level 5; or at least three years of the study of ESL/ELD in high school or adult school programs; or use complete English sentences to carry on a conversation with a native speaker while using the telephone, read English magazines and newspapers, and write complete sentences that may have some grammatical errors.
This is an intermediate level pronunciation and speaking course. In this course students will practice the consonant and vowel sounds as well as learn how stress and intonation affect a person’s ability to understand what is said. Students will use the pronunciation skills and vocabulary presented while practicing conversations on topics related to assigned readings. It is recommended that students take this course concurrently with ESL-92A. (4/09)

For Accent Reduction see Communication Studies, COMM-50.
Entrepreneurship
Allied Health, Business and Public Safety

**DEGREE**
A.A. - Small Business Entrepreneurship

**CERTIFICATE**
Small Business Entrepreneurship

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:

https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Entrepreneurship programs at Merced College are designed to equip students with the necessary skills to start and operate a small business. Students who possess industry skills or talents will be educated in areas to help them be successful business people. Additionally, students who complete undergraduate coursework in the field of entrepreneurship will be prepared for transfer to a four-year institution.

Career Opportunities
Business Owner, Investor, Administrator, Consultant, Manager, Community Leader, CEO, Partner, Controller, Partner.

Highlights
Merced College is a member of the national Collegiate Entrepreneur’s Organization (C-E-O), which supports the education of future entrepreneurs.
A Certificate of Achievement will be awarded upon the satisfactory completion of 30 units of course work in this area of study which includes the core courses indicated for the A.A. Degree in Small Business Entrepreneurship.

Program Student Learning Outcomes
A. Perform an analysis to assess a new business’ potential in the external environment in order to distinguish between a business idea and a business opportunity;
B. Prepare and analyze financial information associated with starting up a new business and maintaining an existing business;
C. Write a business plan suitable for presentation to potential investors and/or financial lending institutions and present it to an audience;
D. Learn techniques to manage, promote, and finance a new business venture using pertinent and current methods.

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<td>Marketing ..................................................3</td>
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<tr>
<td>MKTG-33</td>
<td>Advertising ..................................................3</td>
</tr>
</tbody>
</table>

Required - Select two courses from Management Series:
- MGMT-50A: The Challenge of Supervision ..................0.5
- MGMT-50B: Values & Ethics ..................................0.5
- MGMT-50C: Time Management ...............................0.5
- MGMT-50D: Communication in the Workplace ..........0.5
- MGMT-50F: Team Building ....................................0.5
- MGMT-50G: Decision Making & Problem Solving ....0.5
- MGMT-50H: Customer Service ...............................0.5
- MGMT-50I: Attitude in the Workplace ....................0.5
- MGMT-50J: Thrive and Survive in the Workplace ......0.5
- MGMT-51B: Motivation & Morale .........................0.5
- MGMT-51C: Leadership .......................................0.5
- MGMT-51F: Conflict Resolution ............................0.5
- MGMT-51G: Stress Management & Counseling ..........0.5
- MGMT-52B: Writing Skills for Managers ................0.5
- MGMT-52C: Successful Business Speaking ..............0.5
- MGMT-52D: Managing Organizational Change ..........0.5
- MGMT-52E: Employee Recruiting, Interviewing & Hiring 0.5

Recommended Sequence:
1st Semester (17 units)
- ACTG-04A Financial Accounting (prerequisite for ACTG-31) ....4
- ACTG-51 Applied Accounting (prerequisite for ACTG-31) ......4
- BUS-10 Introduction to Business ................................3
- CPSC-30 Computer Applications ..............................3
- MGMT-31 Principles of Management ..........................3
- MGMT-50-53 2 classes ..........................................1
- MKTG-30 Marketing ..............................................3
- MKTG-33 Advertising ............................................3

2nd Semester (17 units)
- ACTG-31 Computerized Accounting ............................2
- BUS-35 Money Management ......................................3
- BUS-43 Business Communication ..............................3
- MGMT-37 Small Business Entrepreneurship ................3
- MGMT-33 Elements of Effective Leadership .................3
- MKTG-30 Marketing ..............................................3
- MKTG-33 Advertising ............................................3

Program Code: (05700.AA)
**DEGREE**
A.S. - Environmental Technologies

**CERTIFICATE**
Environmental Technologies

**Gainful Employment Disclosure Metrics**
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?id=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

**Program Description**
Environmental Technologies is a program designed to train and educate technicians for employment in business, industry, and governmental agencies to assist in compliance with federal, state, and local regulations.

### DEGREE
**A.S. - Environmental Technologies (03301.AS)**

For an Associate in Science Degree in Environmental Technologies, students must meet the basic graduation requirements and complete the courses listed below.

<table>
<thead>
<tr>
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<tr>
<td></td>
<td>BIOL-01*</td>
<td>General Biology for Non-Majors</td>
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<tr>
<td></td>
<td>or</td>
<td>Fundamentals of Biology: The Cell and Evolution</td>
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<td></td>
<td>or</td>
<td>Honors Fundamentals of Biology: The Cell and</td>
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<tr>
<td></td>
<td>BIOL-06</td>
<td>Environmental Science</td>
<td></td>
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<tr>
<td></td>
<td>CHEM-02A</td>
<td>Introductory Chemistry</td>
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<td></td>
<td>ENTC-30</td>
<td>Introduction to Environmental Technology</td>
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<td></td>
<td>ENTC-32</td>
<td>Industrial Hazardous Waste Generation, Treatment, and Reduction</td>
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<td>ENTC-34</td>
<td>Health Effects of Hazardous Materials</td>
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<td>Hazardous Waste Management Applications</td>
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<td></td>
<td>ENTC-38</td>
<td>Safety and Emergency Response</td>
<td></td>
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<tr>
<td></td>
<td>ENTC-40</td>
<td>Hazardous Materials Management Applications</td>
<td></td>
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</tbody>
</table>

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*A student may not take BIOL-01 for credit after having taken BIOL-04A or BIOL-04AH.

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### CERTIFICATE
Environmental Technologies (03301.CT)

A Certificate of Achievement will be awarded upon the satisfactory completion of the major courses listed below.

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*A student may not take BIOL-01 for credit after having taken BIOL-04A or BIOL-04AH.

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The following courses are suggested to fulfill general education requirements and or recommended as electives:

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<tbody>
<tr>
<td></td>
<td>BIOL-16</td>
<td>General Human Anatomy</td>
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<td></td>
<td>or</td>
<td>Survey of Anatomy and Physiology</td>
<td></td>
</tr>
</tbody>
</table>

4 |                                                                                           |

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Dean
Doug Kain
Phone (209) 384-6293
Area Office SCI-134

Counseling
(209) 384-6314
Cooperative Work Experience
(209) 384-6364
ENVC-30 INTRODUCTION TO ENVIRONMENTAL TECHNOLOGY
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course will provide the student with an overview of the history and effects of pollution, and an examination of the early legislation that was formulated in attempts to clean up the environment. The course provides students with an introduction to ecological principles and an overview of the biological effects on humans and other organisms of toxins and other pollutants. The course focuses on two approaches to resolving environmental issues, attacking the problems through the legal process by application of regulations and by use of scientific control and cleanup techniques through modern technology. This course will provide an introduction to the basic scientific principles as they relate to monitor pollution control equipment. Students will be introduced to techniques of monitoring and sampling the three regions of the environment and the importance of working toward compliance as guided by federal, state, and local regulations. (1/02)

ENTC-32 INDUSTRIAL PROCESSES AND WASTE STREAM MANAGEMENT
3 units: 3 hours lecture.
One-way corequisite: CHEM-02A. Advisories: ENGL-85; MATH-81 or MATH-8.
In this course students will study a variety of processes used by the industry in the production of goods and the provision of services. Early legislation will be examined in its historical setting as the Federal government responded to ecological catastrophes in attempts to halt pollution and protect environmental systems. Treatment technologies will be examined as methods to reduce hazardous waste, and issues of pollution (P2) will be examined. Students will view industrial operations with visits to local manufacturing and waste reduction facilities. A minimum of four specific industries will be examined, following the process of conversion of raw materials into finished products with special attention to the generation of waste, and the Best Available Technology (BAT) for minimizing impact on air, land, and water resources. (3/06)

ENTC-34 HEALTH EFFECTS OF HAZARDOUS MATERIALS
3 units: 3 hours lecture.
Prerequisite: ENTC-30. Advisory: ENGL-85.
This course covers the acute and chronic health effects produced by exposure to chemical, physical, and biological agents. Emphasis will be on those hazardous materials commonly associated with industrial operations, waste disposal, and remediation sites. Topics will include routes of entry, toxic effects, risk evaluation, permissible exposure limits, medical surveillance, control methods for reducing exposure, and understanding Material Safety Data Sheets (MSDS). (1/07)

ENTC-36 HAZARDOUS WASTE MANAGEMENT APPLICATIONS
4 units: 3 hours lecture, 3 hours lab.
Prerequisite: ENTC-30. Advisories: BIOL-06; CHEM-02B; ENGL-85.
This course provides an overview of hazardous waste regulation with emphasis in generator compliance, site investigation and remediation, permitting, enforcement, and liability. The lecture portion of the course explains the hazardous waste regulatory framework, introduces the student to the wide variety and types of environmental resources available, and develops research skills in the hazardous waste area. The laboratory portion of the course complements the lectures by providing hands-on application of regulations at the technician level. Proper methods of preparing a hazardous waste manifest, labeling of storage containers, sampling and analysis, preparing a Phase I Environmental Audit, and selecting environmental consultants are among the many skills developed in this laboratory. (1/07)

ENTC-38 SAFETY AND EMERGENCY RESPONSE
4 units: 3 hours lecture, 3 hours lab.
Prerequisites: ENTC-30, ENTC-34. Advisory: ENGL-85.
This course is designed to provide students with hands-on instruction in safety and emergency response to chemical and physical exposures in industrial and field settings. Topics include: hazard analysis, contingency planning, housekeeping and safety practices, including proper use and selection of PPE, site control and evaluation, handling drums and containers, field sampling and monitoring, proper use of instruments, incident response planning, emergency response including field exercises in the use of PAPR and SCBA, and an understanding of the ICS system. This course, along with ENTC-34, satisfies the requirements for 40-hour employee training under OSHA[1910.120]. (1/07)

ENTC-40 HAZARDOUS MATERIALS MANAGEMENT APPLICATIONS
4 units: 3 hours lecture, 3 hours lab.
Prerequisite: ENTC-30. Advisories: BIOL-06; CHEM-02B; ENGL-85.
This course is a study of requirements and applications of federal, state, and local laws relating to hazardous materials. The course will emphasize compliance with Department of Transportation, OSHA Hazard Communication, SARA Title III Community Right-to-Know, Underground Tank, Asbestos, Proposition 65, and Air Toxics Regulations. The lecture portion of the course will provide the student with an understanding of the legal framework of hazardous materials laws; the laboratory portion will focus on applications of these laws, such as proper labeling, shipping and handling of hazardous materials, obtaining and interpreting MSDSs, permitting and monitoring functions, as well as planning and reporting functions. (1/07)
**Fire Technology**

Allied Health, Business and Public Safety

**DEGREE**
A.A. - Fire Technology

**CERTIFICATE**
Fire Technology

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**Program Description**

The Fire Technology Program is composed of three goal areas: an Associate Degree and /or Certificate of Achievement, Fire Fighter I Academy, and professional growth. With successful completion of the AA or Certificate program, a fire academy, and possession of an EMT certification, the student will possess the basic qualifications for entry level fire service application at most fire prevention and suppression departments.

**Career Opportunities**

Fire prevention and suppression offers many career opportunities including positions in municipal fire departments, county departments, fire protection districts, and California Fire agencies. There are also employment opportunities in correctional institutions, military bases, and numerous federal agencies. Specialists are in demand by industry.

**Highlights**

Academic and hands on experiences

---

**DEGREE (02/11)**

A.A. - Fire Technology (21400.AA)

For an Associate in Arts in Fire Technology, students must meet the graduation requirements and complete the following required courses with a 2.0 GPA or higher in each class.

**Program Student Learning Outcomes**

A. Demonstrate effective written communication skills.
B. Demonstrate effective verbal and nonverbal communication skills.
C. At a basic level apply the principles of fire technology.
D. Demonstrate an appreciation of lifelong learning.
E. Demonstrate the ability to evaluate and adhere to ethics and compassionate treatment of patients and victims.
F. At a basic level demonstrate the ability to evaluate information and incorporate it into appropriate tasks.
G. At a basic level demonstrate the ability to analyze and solve problems using logical and creative methods.

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<td>3</td>
</tr>
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<td>3</td>
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<td>3</td>
</tr>
<tr>
<td>FIRE-37</td>
<td>Fire Hydraulics</td>
<td>3</td>
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<tr>
<td>FIRE-38</td>
<td>Fire Apparatus and Equipment</td>
<td>3</td>
</tr>
<tr>
<td>FIRE-39</td>
<td>Fire Company &amp; Organization Procedure</td>
<td>3</td>
</tr>
<tr>
<td>FIRE-49A-ZZ</td>
<td>Special Topics in Fire Technology</td>
<td>0.5 - 3</td>
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<tr>
<td>FIRE-65F</td>
<td>Hazardous Materials – First Responder Operations</td>
<td>1</td>
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<tr>
<td>FIRE-65G</td>
<td>First Responder Operations/Decontamination</td>
<td>0.5</td>
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<tr>
<td>FIRE-67B</td>
<td>Auto Extrication</td>
<td>0.5</td>
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<tr>
<td>FIRE-69B</td>
<td>First Responder Re-certification</td>
<td>1</td>
</tr>
<tr>
<td>FIRE-70</td>
<td>Fire Department Administration</td>
<td>3</td>
</tr>
</tbody>
</table>

Plus 15 additional FIRE units ........................................ 15

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**CERTIFICATE**

Fire Technology (21400.CT)

A Certificate of Achievement will be awarded upon the satisfactory completion of 30 units of course work in this area of study, which must include the first five courses listed for the A.A. Degree in Fire Technology. A 2.0 GPA or higher must be earned in each class.

**Program Student Learning Outcomes**

A. Demonstrate effective written communication skills.
B. Demonstrate effective verbal and nonverbal communication skills.
C. At a basic level apply the principles of fire technology.
D. Demonstrate the ability to evaluate and adhere to ethics and compassionate treatment of patients and victims.
E. Demonstrate the ability to evaluate and adhere to ethics and compassionate treatment of patients and victims.
F. At a basic level demonstrate the ability to analyze information and incorporate it into appropriate tasks.
G. At a basic level demonstrate the ability to analyze and solve problems using logical and creative methods.

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<td>FIRE-34</td>
<td>Building Construction for Fire Protection</td>
<td>3</td>
</tr>
</tbody>
</table>

Plus 15 additional FIRE units ........................................ 15
ACADEMY

Firefighter

Students must complete the courses listed in the following categories in order to meet NFPA Professional Standards for California Fire Service Certification. Additionally, students must fulfill state-mandated employment time requirements for each classification.

Program Student Learning Outcomes
A. Demonstrate effective written communication skills.
B. Demonstrate effective verbal and nonverbal communication skills.
C. At a basic level apply the principles of fire technology.
D. Demonstrate an appreciation of lifelong learning.
E. Demonstrate the ability to evaluate and adhere to ethics and compassionate treatment of patients and victims.
F. At a basic level demonstrate the ability to evaluate information and incorporate it into appropriate tasks.
G. At a basic level demonstrate the ability to analyze and solve problems using logical and creative methods.

FIRE-63A Basic Firefighter I, Academy ..................................... 8
FIRE-63B Basic Firefighter I, Academy ..................................... 8
FIRE-64 Basic Firefighter II, Academy .................................... 4

Fire Officer I

The following courses are designed to provide the fire officer with instruction according to the standards identified within the California Fire Service Master Plan for Training and Education. Successful completion of all eight courses may enable the participant to receive certification as a Fire Officer I.

Program Student Learning Outcomes
A. Demonstrate effective written communication skills.
B. Demonstrate effective verbal and nonverbal communication skills.
C. Apply the principles of fire technology.
D. Demonstrate an appreciation of lifelong learning.
E. Demonstrate the ability to evaluate information and incorporate it into appropriate tasks.
F. Demonstrate the ability to analyze and solve problems using logical and creative methods.

FIRE-47A Fire Investigation IA ............................................... 2
FIRE-71A Fire Instructor I (Module A) .................................... 2.25
FIRE-71B Fire Instructor I (Module B) .................................... 2
FIRE-72A Fire Command I (Module A) .................................... 2
FIRE-72B Fire Command I (Module B) .................................... 2
FIRE-73A Fire Prevention I (Module A) .................................... 2
FIRE-73B Fire Prevention I (Module B) .................................... 2
FIRE-75 Fire Management I - Management for Co Officers ....... 2

Recommended Sequence: Certificate Fire Technology (21400.AA)

Fall 1
FIRE-30 Fire Protection Organization ..................................... 3
FIRE-31 Fire Behavior and Combustion .................................. 3
FIRE-32 Fire Prevention Technology ..................................... 3
FIRE-33 Fire Protection Equipment and Systems ..................... 3

Spring 1
FIRE-30 Fire Protection Organization ..................................... 3
FIRE-34 Building Construction for Fire Protection ................... 3

Recommended Sequence: Certificate Fire Technology (21400.AA)

FIRE-35 Fire Fighting Tactics and Strategy ............................. 3
FIRE-36 Hazardous Materials ............................................... 3
FIRE-63A Basic Firefighter I, Academy .................................. 8
FIRE-63B Basic Firefighter I, Academy .................................. 8
FIRE-64 Basic Firefighter II, Academy .................................. 4

FIRE TECHNOLOGY (FIRE)

FIRE-30 FIRE PROTECTION ORGANIZATION
3 units: 3 hours lecture.
Prerequisite: FIRE-30. Advisory: ENGL-85.
This course provides an introduction to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; and introduction to fire strategy and tactics. (11/04)

FIRE-31 FIRE BEHAVIOR AND COMBUSTION
3 units: 3 hours lecture.
Prerequisite: FIRE-30. Advisory: ENGL-85.
This course presents the theory and fundamentals of how and why fires start, spread, and are controlled; an in-depth study of fire chemistry and physics; fire characteristics of materials; extinguishing agents; and fire control techniques. (10/10)

FIRE-32 FIRE PREVENTION TECHNOLOGY
3 units: 3 hours lecture.
Prerequisite: FIRE-30. Advisory: ENGL-85.
This course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire safety education and suppression systems. (3/12)

FIRE-33 FIRE PROTECTION EQUIPMENT AND SYSTEMS
3 units: 3 hours lecture.
Prerequisite: FIRE-30. Advisory: ENGL-85.
This course provides information relating to features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. (10/10)

FIRE-34 BUILDING CONSTRUCTION FOR FIRE PROTECTION
3 units: 3 hours lecture.
Prerequisite: FIRE-30. Advisory: ENGL-85.
This course is the study of components of building construction that relate to fire safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at fires. The development and evolution of building and fire codes will be studied in relationship to past fires in residential, commercial, and industrial occupancies. (10/10)
FIRE-35 FIREFIGHTING TACTICS AND STRATEGY
3 units: 3 hours lecture.
Prerequisite: FIRE-30. Advisory: ENGL-85.
This course relates basic fire chemistry, equipment, and manpower to firefighting tactics and strategy, methods of attack, and pre-planning. (10/10)

FIRE-36 HAZARDOUS MATERIALS
3 units: 3 hours lecture.
This course presents the theory and fundamentals of how and why fires start, spread, and are controlled: an in-depth study of fire chemistry and physics, fire characteristics of materials, extinguishing agents, and fire control techniques. (10/10)

FIRE-37 FIRE HYDRAULICS
3 units: 3 hours lecture.
Prerequisite: FIRE-30. Advisory: ENGL-85; MATH-80.
This course is a basic review of mathematics, hydraulic laws and formulas, and water supply and pump requirements as applied to fire service. (11/10)

FIRE-38 FIRE APPARATUS AND EQUIPMENT
3 units: 3 hours lecture.
Prerequisite: FIRE-30. Advisories: ENGL-85; MATH-80.
This course pertains to driving laws and driving techniques, and the construction and operation of pumping engines, ladder trucks, aerial platforms, specialized equipment, and apparatus maintenance. (11/04)

FIRE-39 FIRE COMPANY & ORGANIZATION PROCEDURE
3 units: 3 hours lecture.
Prerequisite: FIRE-30. Advisory: ENGL-85.
This course is a general introduction to hazardous materials awareness, in emergencies, detecting hazardous materials presence, and estimating the likely harm without intervention. (11/10)

FIRE-40A ZZ SPECIAL TOPICS IN FIRE TECHNOLOGY
0.5 - 4 units: 0.5 - 4 hours lecture, 0 - 12 hours lab.
Prerequisite: FIRE-30. Advisory: ENGL-84.
This course is designed to address special topics in fire technology to meet current needs of students. The course will allow pre-service and in-service personnel to maintain the most current training standards in the field. (10/11)

FIRE-41 FIRE INVESTIGATION - 1A
2 units: 36 total hours lecture.
Prerequisite: FIRE-30 or current volunteer, paid call, seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-85.
This course is an introduction to arson, laws related to arson, types of incendiary fires, and methods of determining fire cause and recognizing and preserving evidence. A special emphasis will be placed on report-writing techniques. (11/10)

FIRE-42B FIRE INVESTIGATION - 1B
2 units: 36 total hours lecture.
Prerequisite: FIRE-41A. Advisory: ENGL-85.
This course covers evidence related to arson and fire deaths, interviewing, and interrogating, investigation of structure, wildland, and vehicle fires are covered as well as fire scene documentation; search and seizure laws are also covered. (10/10)

FIRE-43 BASIC FIREFIGHTER I, ACADEMY
3 units: 3 hours lecture.
Prerequisite: FIRE-63A. Advisory: ENGL-85.
This course provides manipulative and technical training in basic concepts of ventilation, fire control, salvage and overhaul operations, fire protection water systems, fire protection systems, fire prevention and investigation, communications, vehicle extrication, wildland fire fighting, urban interface, and hazardous materials. Students must supply instructor approved personal protective equipment (required instructional material). (12/04)

FIRE-44A ZZ SPECIAL TOPICS IN FIRE TECHNOLOGY
0.5 - 4 units: 0.5 - 4 hours lecture, 0 - 12 hours lab.
Prerequisite: FIRE-30. Advisory: ENGL-84.
This course is designed to address special topics in fire technology to meet current needs of students. The course will allow pre-service and in-service personnel to maintain the most current training standards in the field. (10/11)

FIRE-45A ZZ SPECIAL TOPICS IN FIRE TECHNOLOGY
0.5 - 4 units: 0.5 - 4 hours lecture, 0 - 12 hours lab.
Prerequisite: FIRE-30. Advisory: ENGL-84.
This course is designed to address special topics in fire technology to meet current needs of students. The course will allow pre-service and in-service personnel to maintain the most current training standards in the field. (10/11)

FIRE-46A ZZ SPECIAL TOPICS IN FIRE TECHNOLOGY
0.5 - 4 units: 0.5 - 4 hours lecture, 0 - 12 hours lab.
Prerequisite: FIRE-30. Advisory: ENGL-84.
This course is designed to address special topics in fire technology to meet current needs of students. The course will allow pre-service and in-service personnel to maintain the most current training standards in the field. (10/11)
FIRE-65F HAZARDOUS MATERIALS – FIRST RESPONDER OPERATIONS (H M F.R.O.)
1 unit: 20.7 total lecture hours.
Advisories: ENGL-85; FIRE-30 or currently a paid call, seasonal, or full-time firefighter.
This course covers how hazardous materials can harm people, the environment, and property, and how the first responder may use clues to recognize a hazardous materials incident and implement actions to protect themselves and the public. (2/11)

FIRE-65G FIRST RESPONDER OPERATIONS – DECON TAMINATION (DECON FRO)
0.5 unit: 0.5 hour lecture.
Advisories: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department, FIRE-65F.
This course covers how to safely and competently perform “Fully/Primary” decontamination in at least “Level B” personal protective equipment based on agency or generic Decon SOP. This course builds upon FRO competencies to perform decontamination functions within the contamination reduction zone. (2/11)

FIRE-66A VOLUNTEER FIREFIGHTER BASIC SKILLS
2.5 units: 2.5 hours lecture.
Advisories: ENGL-84.
This course provides the firefighter with basic knowledge of fire behavior and control and basic skills to safely perform essential fire ground tasks with minimal supervision. Students must supply instructor-approved personal protective equipment (a required instructional supply). (12/04)

FIRE-66D EQUIPMENT OPERATOR FOR VOLUNTEER FIREFIGHTERS
2 units: 2 hours lecture.
Limitation on enrollment: Full-time firefighter or minimum of one continuous year as a paid-call firefighter; valid California Class B (commercial or firefighter) permit with tank and air brake endorsements. If the student has a commercial California Driver’s License, it must indicate manual transmission and have a current health questionnaire. Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-85.
This course provides the firefighter with basic knowledge of radio communications use regarding size-up and report conditions. Forms and reports related to operating equipment and incidents are covered as well as emergency equipment placement, and strategy and tactics for structure, wildland, and vehicle fires. Auto extrication and defensive driving and pump theory are included. (2/11)

FIRE-67A ROPE RESCUE
1 unit: 1 hour lecture.
Prerequisite: FIRE-30. Advisory: ENGL-84.
This course is designed to introduce the novice to the basics of equipment nomenclature, rope design and construction, care and maintenance, and knots and webbing as they apply to rope rescue emergencies. (12/04)

FIRE-67B AUTO EXTRICATION
0.5 unit: .5 hours lecture.
Advisories: ENGL-85; FIRE-30 or currently a paid call, seasonal, or full-time firefighter.
This course provides classroom instruction of vehicle rescue concepts. It introduces students to common vehicle rescue tools and hands-on practice of basic techniques used to free persons entrapped in vehicles as a result of traffic collisions. To successfully complete the skills portion, students must have the ability to lift tools that may weigh in excess of 50 pounds and perform other rigorous physical tasks. Students must supply instructor-approved personal protective equipment (required instructional material) equivalent to that of a structural firefighting ensemble. This shall, at a minimum, include a helmet with face shield and/or goggles, leather gloves, turnout coat and pants, and turnout boots (or steel-toed lace-up leather boots at least 8” in height with lugged soles). This course is repeatable three times. (11/05)

FIRE-68B BASIC INCIDENT COMMAND SYSTEM (I-200)
1 unit: 1 hour lecture.
Limitation on enrollment: Instructor-verified ICS (I-100) completion. Advisory: ENGL-85.
This course is designed for the entry-level and veteran firefighter. The subject matter relates to principles and features of ICS, organization, incident facilities, incident resources and responsibilities associated with ICS Assignments. Student must have instructor verified ICS (I-100) completion. (2/11)

FIRE-68C INCIDENT COMMAND SYSTEM - INTERMEDIATE (I-300)
1.5 units: 1.5 hours lecture.
Prerequisite: FIRE-68B. Advisory: ENGL-85.
This course is designed for the entry-level and veteran firefighter. The subject matter relates to organization and staffing for incidents or events, incident resources management, air operations, and incident event planning. (11/11)

FIRE-68D ADVANCED INCIDENT COMMAND SYSTEM (I-400)
2 units: 2 hours lecture.
Prerequisite: FIRE-68C. Advisory: ENGL-85.
This is an advanced course in Incident Command System. (1/05)

FIRE-69A FIRST RESPONDER
2.5 units: 2.5 hours lecture.
Prerequisite: FIRE-30 or currently a paid call, seasonal, or full-time firefighter. Advisory: ENGL-85.
This course is designed to meet the state requirements for emergency medical personnel. The course relates to patient assessment, cardiovascular systems, fractures, splinting, childbirth, and environmental emergencies. (11/05)

FIRE-69B FIRST RESPONDER RE-CERTIFICATION
1.5 units: 1.5 hours lecture.
Limitation on enrollment: Must possess a current valid CPR card in Basic Life Support of Health Care Providers (or equivalent) as outlined by the American Heart Association. Prerequisite: FIRE-69A. Advisory: ENGL-85.
This course is designed to meet the state re-certification requirements for emergency medical personnel. The course relates to patient assessment, cardiovascular systems, fractures, splinting, childbirth, and environmental emergencies. This course may be repeated three times. (2/11)

FIRE-70 FIRE DEPARTMENT ADMINISTRATION
3 units: 3 hours lecture.
Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-85.
This course is designed to cover all subject matter necessary to organize and administer a fire department. (2/11)

FIRE-71A FIRE INSTRUCTOR I -- MODULE A
2.25 units: 40.5 total lecture hours.
Prerequisite: FIRE-30 or currently a paid call, seasonal, or full-time firefighter for a certified fire protection department. Advisory: ENGL-85.
This course is designed for the fire company officer who conducts in-service training programs. The course provides a variety of methods and techniques to help personnel select, develop, and organize material for in-service programs. Methods of evaluation and opportunity to apply the major principles of learning through demonstrations are stressed. The course is certified by the office of the California State Fire Marshal. (2/11)

FIRE-71B FIRE INSTRUCTOR I -- MODULE B
2 units: 2 hours lecture.
Prerequisite: FIRE-71A. Advisory: ENGL-85
This course is designed for the fire company officer who conducts in-service training programs. The course provides instruction in the use of visual aids, test construction, and teaching demonstrations. The successful completion of this course and the State Fire Marshal’s examination will result in State certification. (11/11)
FIRE-72A  FIRE COMMAND I -- MODULE A
2 units: 40 total hours lecture.
Prerequisite: FIRE-35. Advisory: ENGL-84.
This course is designed to provide the fire company officer with information and experience in command and control techniques at the scene of an emergency. (12/04)

FIRE-72B  FIRE COMMAND I -- MODULE B
2 units: 40 total hours lecture.
Prerequisite: FIRE-72A. Advisory: ENGL-85.
This course is designed to provide the fire company officer with information and experience in command and control techniques at the scene of a hazardous materials emergency. (12/04)

FIRE-73A  FIRE PREVENTION I -- MODULE A
2 units: 40 total hours lecture.
Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-85.
This course will provide instruction in basic fire prevention management for company officers and fire prevention personnel. The students will learn responses to a variety of fire prevention situations in a professional and effective manner. This course will prepare the first-level fire officer to deal with responsibilities of fire prevention in his/her jurisdiction. (11/11)

FIRE-73B  FIRE PREVENTION I -- MODULE B
2 units: 40 total hours lecture.
Prerequisite: FIRE-73A. Advisory: ENGL-85.
This course will provide instruction in basic fire prevention management for company officers and fire prevention personnel. It will teach the response to a variety of fire prevention situations in a professional and effective manner. The course will prepare first-level fire officers to deal with responsibilities of fire prevention in his/her jurisdiction. (11/11)

FIRE-75  FIRE MANAGEMENT I - MANAGEMENT FOR COMPANY OFFICERS
2 units: 40 total hours lecture.
Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-85.
This course will provide instruction to improve the student’s managerial effectiveness and will require demonstration of growth and development in the use of managerial skills. The course will stress resource identification and utilization. (11/11)

FIRE-76A  FIRE APPARATUS DRIVER/OPERATOR 1A (EMERGENCY VEHICLE OPERATIONS)
2 units: 40 total hours lecture.
Limitation on enrollment: Must possess a valid California Drivers License, Class B, firefighter restricted (minimum); must be physically fit per department standards; must not have a hearing loss of 25 decibels or more in 3 of 4 frequencies; must have vision better than, or corrected to, far visual acuity of 20/30 with contact lenses or spectacles; and must be a paid call, volunteer, or full-time firefighter at a certified fire protection agency. Prerequisites: FIRE-63A, FIRE-63B. Advisory: ENGL-85.
This course will provide fire service personnel with knowledge of the laws and requirements that pertain to emergency vehicle operation and basic maintenance, troubleshooting, and documentation of fire apparatus. (11/11)

FIRE-76B  FIRE APPARATUS DRIVER/OPERATOR 1B (EMERGENCY VEHICLE OPERATIONS)
2 units: 40 total hours lecture.
Limitation on enrollment: Must possess a valid California Drivers License, Class B, firefighter restricted (minimum); must be physically fit per department standards; must not have a hearing loss of 25 decibels or more in 3 of 4 frequencies; must have vision better than, or corrected to, far visual acuity of 20/30 with contact lenses or spectacles; and must be a paid call, volunteer, or full-time firefighter at a certified fire protection agency. Prerequisite: FIRE-76A. Advisories: ENGL-85; MATH-80.
This course will provide fire service personnel with information on pump construction, theory of pump operation, and methods of performing basic hydraulics. Further, students will receive information and techniques on basic inspections, documentation, maintenance, and troubleshooting fire pumps. This course will provide fire service personnel with the knowledge of the laws and requirements that pertain to emergency vehicle operation and basic maintenance, troubleshooting, and documentation of fire apparatus. (11/11)
DEGREE
A.A. - Foods and Nutrition

CERTIFICATES
Foods and Nutrition
Dietetic Service Supervisor

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
Food Service is one of the fastest growing industries. Schools, hospitals, prisons, universities and the hospitality industry are always in need of trained food service professionals. Merced College provides Foods and Nutrition courses that are designed to provide knowledge and skills to ensure a strong foundation for students.

Career Opportunities
Employment of Registered dietitians is expected to grow about as fast as the average for all occupations because of increased emphasis on disease prevention, a growing and aging population and public interest in nutrition. Growth is anticipated in nursing homes, residential care facilities and physicians clinics. There are always opportunities for all levels of Food service.

Dietary Service Supervisor
Foods and Nutrition
Registered Dietitian

Off-Site Resources:
American Dietetic Association: www.eatright.org
Programs with internships: www.calstatefresno.org

DEGREE (2/08)
A.A. - Foods and Nutrition (13160.AA)

For an Associate of Arts Degree in Foods and Nutrition, students must meet the graduation requirements and complete the following courses.

Program Student Learning Outcomes
A. Create a detailed menu utilizing resources and following restrictions for a particular client group.
B. Internalize, practice and direct food safety and sanitation techniques.
C. Demonstrate ability to oversee and prepare/plan meals for large quantities.
D. Apply supervisory skills in a food service setting.

Core:

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>NUTR-10</td>
<td>Nutrition</td>
<td>3</td>
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<tr>
<td>NUTR-20</td>
<td>Principles of Foods</td>
<td>3</td>
</tr>
<tr>
<td>NUTR-36</td>
<td>Nutrition and Food Service Supervised Field Experience</td>
<td>2.5</td>
</tr>
<tr>
<td>NUTR-42</td>
<td>Quantity Food Preparation</td>
<td>3</td>
</tr>
<tr>
<td>NUTR-44</td>
<td>Food Safety and Sanitation</td>
<td>2</td>
</tr>
<tr>
<td>NUTR-45</td>
<td>Introduction to Therapeutic Diets</td>
<td>2</td>
</tr>
<tr>
<td>MGMT-50-52</td>
<td>Management 50 Series</td>
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Plus seven units from the following courses:

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<td>CPSC-30</td>
<td>Computer Applications</td>
<td>3</td>
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<tr>
<td>NUTR-26ABC</td>
<td>Independent Study in Foods and Nutrition</td>
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</tr>
<tr>
<td>NUTR-39</td>
<td>Nutrition for Young Children</td>
<td>3</td>
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<tr>
<td>NUTR-40</td>
<td>Menu Planning for Food Service Operations</td>
<td>3</td>
</tr>
<tr>
<td>NUTR-41</td>
<td>Infant and Toddler Feeding</td>
<td>1</td>
</tr>
<tr>
<td>NUTR-43</td>
<td>Children and Weight Concerns</td>
<td>1</td>
</tr>
<tr>
<td>NUTR-70A-ZZ</td>
<td>Special Topics in Foods and Nutrition</td>
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CERTIFICATE (2/08)
Foods and Nutrition (13160.CL)

A Certificate of Achievement will be awarded upon the satisfactory completion of the curriculum listed below.

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24
CERTIFICATE (2/08)
Dietetic Service Supervisor (13180.CE)

Upon satisfactory completion of the 17-unit core listed below, students meet the California Department of Health licensing requirements for Dietetic Service Supervisor.

Program Student Learning Outcomes
A. Demonstrates ability to provide safe, satisfying and nutritionally adequate food for patients/clients with appropriate staff, space, equipment and supplies with consideration to budget.
B. Assist in the development of planned menus to meet nutritional needs of the population and ensure that menus are followed.

Core: Units
NUTR-10 Nutrition..................................................3
NUTR-20 Principles of Foods.......................................3
NUTR-36 Nutrition and Food Service Supervised Field Experience ..........................................................2.5
NUTR-42 Quantity Food Preparation............................3
NUTR-44 Food Safety and Sanitation.............................2
NUTR-45 Introduction to Therapeutic Diets .....................2
MGMT-50-52 Management 50 Series................................1.5

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Recommended Sequence: A.A. - Foods and Nutrition (13160.AA); Certificate Foods and Nutrition (13160.CL)

Fall 1
NUTR-10 Nutrition..................................................3
NUTR-42 Quantity Food Preparation............................3
NUTR-44 Food Safety and Sanitation.............................2
MGMT-50-52 Management 50 Series................................1.5

Spring 1
NUTR-10 Nutrition..................................................3
NUTR-20 Principles of Foods.......................................3
NUTR-36 Nutrition and Food Service Supervised Field Experience ..........................................................2.5
NUTR-45 Introduction to Therapeutic Diets .....................2
MGMT-50-52 Management 50 Series................................1.5

Summer 1
NUTR-10 Nutrition..................................................3
MGMT-50-52 Management 50 Series................................1.5

NUTRITION (NUTR)

NUTR-10 NUTRITION
(CSU breadth area E)
3 units: 3 hours lecture.
Prerequisite: ENGL-85. Advisory: MATH-81.
This course presents an in-depth study of the essential nutrients and their functions, and the chemical composition of foods and their utilization in the body. It includes discussion on the nutritional values of foods, current topics in nutrition and nutritional needs throughout the life cycle. The relationship between diet and diseases will also be covered. (12/11)

NUTR-20 PRINCIPLES OF FOODS
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-91; NUTR-44.
This course will study all aspects of food preparation, service and food science. Emphasis is on nutrition and the food industry. Principles of food as well as career options will be covered. (10/10)

NUTR-26ABC INDEPENDENT STUDY IN FOODS AND NUTRITION
1-3 units: 3-9 hours lab.
Prerequisite: NUTR-20.
This course is a supervised study in the area of foods and nutrition. A special program in the student’s area of interest will be planned, arranged, and carried out with approval and supervision of the instructor. Each student will submit a report or project upon completion. (3/05)

NUTR-36 NUTRITION AND FOOD SERVICE SUPERVISED FIELD EXPERIENCE
2.5 units: 1 hour lecture, 4.5 hours lab.
Limitation on enrollment: Students must have a negative result on a TB test within the past six months. Prerequisite: NUTR-44. One-way corequisites: NUTR-42, NUTR 45. Advisories: ENGL-85; MATH-91
This course is designed to help students learn problem solving and communication skills. The student is engaged in on-the-job learning activities under the supervision of a food service work site supervisor and a college nutrition instructor. Learning objectives are established based on dietary service supervisor functions. Students rotate through experiences in health care facilities, schools and own work site if applicable. Students will be required to follow dress standards required by the facility in which they work. This course is recommended at or near the completion of the Dietetic Service Supervisory Program. (11/07)

NUTR-39 NUTRITION FOR YOUNG CHILDREN (Also: CLDV-39)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course offers a study of nutrients and their function with an emphasis on the needs of children -- birth through adolescence. Cultural and socioeconomic influences on food practices, and methods of teaching good nutrition to children will be covered. Emphasis will be on improving the nutritional status of children. This course is designed for Early Childhood Education majors to fulfill state requirements for a Children's Learning Center permit. The course is also for parents who wish to become more knowledgeable about nutrition for their children and for food service workers in child care programs. (11/08)

NUTR-40 MENU PLANNING FOR FOOD SERVICE OPERATIONS
3 units: 3 hours lecture.
Prerequisite: NUTR-10; Advisories: ENGL-85.
This course covers the principles of menu planning for a variety of food service operations including childcare, schools, elder care, and restaurants. Emphasis is on multicultural and healthful menus as well as policies and procedures in an organization and significance of the menu and the cost and pricing of menu items. (10/10)
NUTR-41 INFANT AND TODDLER FEEDING  
1 unit: 1 hour lecture.  
Advisory: ENGL-85.  
This course focuses on feeding typical and atypical developing infants beginning at birth with breast milk, formulas, and first foods, and progresses to textures and foods appropriate for the toddler. The course focuses on how to feed a baby, prevent baby bottle tooth decay, and choking prevention. Students will learn about appropriate snacks, food safety aspects, and food preparation for children with varying needs. Finally, students will have the opportunity to design a menu meeting the Child Care Food Program Guidelines. This course is recommended for ECE and Early Intervention students. (11/05)

NUTR-42 QUANTITY FOOD PREPARATION  
3 units: 2.5 hours lecture, 1.5 hours lab.  
Prerequisites: NUTR-10, NUTR-44. Advisories: ENGL-85; MATH-91; NUTR-20.  
This quantity food service course is designed for child care, school food service, catering, and Health care facilities. This class includes food production, use of small and large equipment, sanitation and safety, record keeping, work improvement, supervisor’s role, and a nutrition component which includes modified diets for quantity food preparation. (11/07)

NUTR-43 CHILDREN AND WEIGHT CONCERNS  
1 unit: 1 hour lecture.  
Advisory: ENGL-85.  
This course is designed to provide an overview of the problem of childhood obesity. Students will explore reasons for the recent epidemic in our country and review the trends. Factors including pressure by the media and the connection to eating disorders will be studied. Finally students will look at the role of the family, school and community in addressing childhood obesity. This course is recommended for Foods and Nutrition and ECE students. (10/10)

NUTR-44 FOOD SAFETY AND SANITATION  
2 units: 2 hours lecture.  
Advisory: ENGL-85.  
This beginning course is designed to teach basic food safety principles of personal and institutional sanitation. This includes the proper storage, preparation, and service as well as HACCP, food allergies, regulations and pest management. An emphasis is placed on the Supervisor’s role in maintaining high standards for these principles. This course meets the California Retail Food Code requirement section numbers 113947.1 through 113947.6. This course is required by the Dietary Service Supervisory Program and is highly recommended to those interested in working in Food Service. (3/12)

NUTR-45 INTRODUCTION TO THERAPEUTIC DIETS  
2 units: 2 hours lecture.  
Prerequisite: NUTR-10; Advisory: ENGL-85.  
This course is designed to acquaint students with therapeutic and modified diets used in health care facilities. Topics include nutrition for disease states as well as normal nutrition needs. Students will role play on how to interview patients to obtain food preferences, become familiar with assistive feeding devices, and be able to develop menus to meet the nutritional needs of patients. Cultural considerations and the management of long term care residents will be emphasized. This course is required for the student planning a career in food service supervision especially in health care institutions and recommended for nursing students. (11/07)

NUTR-70A-ZZ SPECIAL TOPICS IN FOODS AND NUTRITION  
1-3 units: 1-3 hours lecture, 0-9 hours lab.  
Advisories: ENGL-81, ENGL-84; NUTR-10.  
This is a course designed to address special topics in Foods and Nutrition to meet current needs of students. Specific classes will be offered to expose and introduce students to current issues in the foods and nutrition field and provide most up-to-date information in order to be successful in the industry. (11/10)
Forestry
Career and Technical Education

FORESTRY (FORS)
FORS-10 ELEMENTS OF FORESTRY
3 units: 2 hours lecture, 3 hours lab.
Prerequisite/Advisory: None.
This course provides the student with an understanding of complexities of
the forest industry and management. Fire protection, the lumber industry,
nursery and planting practices, and parks and recreation will be studied.

Foster Care Education
English, Basic Skills and Child Development

CERTIFICATE
Foster Care Education Certificate of Specialization

A Certificate of Specialization in Foster Care Education will be awarded
upon the satisfactory completion of 15 units from the following courses.

<table>
<thead>
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<th>Units</th>
<th>Course Code</th>
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<tbody>
<tr>
<td></td>
<td>CLDV-02</td>
<td>Child, Family and Community</td>
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<td></td>
<td>CLDV-09</td>
<td>Human Development</td>
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<tr>
<td>or</td>
<td>NUTR-10</td>
<td>Child Growth and Development</td>
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<tr>
<td></td>
<td>NUTR-39</td>
<td>Nutrition</td>
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<tr>
<td>or</td>
<td>CLDV-82A-Z</td>
<td>Nutrition for Young Children</td>
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<td></td>
<td>COMM-04</td>
<td>Foster Care Education</td>
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<tr>
<td>or</td>
<td>COMM-05</td>
<td>Small Group Discussion and Problem Solving</td>
</tr>
<tr>
<td></td>
<td>CLDV-35</td>
<td>Interpersonal Communication</td>
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<tr>
<td></td>
<td>CLDV-35L</td>
<td>Infant and Toddler Care</td>
</tr>
<tr>
<td></td>
<td>PSYC-01A</td>
<td>Introduction to Psychology</td>
</tr>
</tbody>
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15
French
Social Sciences, Humanities and Fine Arts

DEGREE
A.A. - French

Program Description
Studies in foreign languages provide specialists to work in areas such as anthropology, economics, political science, literature, international business, and the travel industry. While teaching is one of the principal areas of employment, other careers may be found in interpreting, translating, research, diplomacy, libraries, publishing, and the service industries.

DEGREE
A.A. - French (11200.AA)

For an Associate in Arts Degree in French students should meet the graduation requirements and complete the 26-unit curriculum as listed below. The courses listed below must be in addition to the basic graduation requirements.

Program Student Learning Outcomes
A. Speaking: Initiate, minimally sustain, and close in a simple way basic communicative tasks.
B. Listening: Distill information from such discourse and demonstrate understanding.
C. Writing: Compose a simple narrative and meet practical needs.
D. Culture: Recognize pervasive values of the culture.
E. Reading: Understand main ideas.

Units
FREN-01 Elementary French ....................................................5
FREN-02 Elementary French ....................................................5
FREN-03 Intermediate French ..................................................5
FREN-04 Intermediate French ..................................................5
HIST-04A History of Civilization Part I .......................................3
HIST-04B History of Civilization: Part II .....................................3

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Recommended Sequence: A.A. - French (11200.AA)

Fall 1
FREN-01 Elementary French ....................................................5
HIST-04A History of civilization part I .......................................3

Spring 1
FREN-02 Elementary French ....................................................5
HIST-04B History of civilization part II .....................................3

Fall 2
FREN-03 Intermediate French ..................................................5

Spring 2
FREN-04 Intermediate French ..................................................5

FRENCH (FREN)

FREN-01 ELEMENTARY FRENCH
(CSU breadth area C2) (IGETC area 6)
5 units: 5 hours lecture.
Advisory: ENGL-84.
This is a beginner's course. The course will focus on the development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in French the most basic functions of everyday life. This course is not recommended for native speakers. (10/06)

FREN-02 ELEMENTARY FRENCH
(CSU breadth area C2) (IGETC area 6)
5 units: 5 hours lecture.
Prerequisite: FREN-01 or 1 year of high school French.
FREN-02 is the continuation of FREN-01. This course will focus on the further development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in French basic functions of everyday life. (10/06)

FREN-03 INTERMEDIATE FRENCH
(CSU breadth area C2) (IGETC area 3B/6)
5 units: 5 hours lecture.
Prerequisite: FREN-02 or two years of high school French. Advisory: LRNR-30.
FREN-03 is a continuation of FREN-02. This course reviews and further develops grammatical concepts introduced in FREN 01 and FREN 02, as well as introduces the student to new concepts. Through varied readings, composition, and discussion, the student will increase with his or her vocabulary and cultural knowledge. (10/06)

FREN-04 INTERMEDIATE FRENCH
(CSU breadth area C2) (IGETC area 3B/6)
5 units: 5 hours lecture.
Prerequisite: FREN-03. Advisory: LRNR-30.
This course is thorough review of the fundamentals of reading, writing, speaking and understanding French, designed to aid the student in preparing for advanced studies in French composition, grammar, and conversation as well as literature and French, History and culture. (10/06)
Fruit Production (See Crop Science)
Career and Technical Education

Dean
James Andersen
Phone
(209) 384-6250
Area Office
AG-Office
Counseling
(209) 384-6314
Cooperative Work Experience
(209) 384-6364

Geography
Social Sciences, Humanities and Fine Arts

Geography is the study of the physical aspects of the planet. Topics studied include population pressures, food supply, and resource availability. Physical Geography is a natural science about weather, climate, and earth processes creating different landforms, while World Geography is a social science of how mankind utilizes earth resources to create different cultures and standards of living. The study of Geography enables a student to better understand world problems and events; it prepares a student for a career as a planner, teacher, journalist, earth scientist, and for other occupations.

**GEOGRAPHY (GEOG)**

Lower division preparation for transfer students intending to major in geography should include:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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<tr>
<td>ANTH-02</td>
<td>Cultural Anthropology</td>
<td>3</td>
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<tr>
<td>ENGL-01A</td>
<td>College Composition and Reading</td>
<td>4</td>
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<tr>
<td>ENGL-01B</td>
<td>Introduction to Literature</td>
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<td>GEOG-01</td>
<td>Physical Geography</td>
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<td>GEOG-01L</td>
<td>Physical Geography Lab</td>
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<td>GEOG-02</td>
<td>World Geography</td>
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<tr>
<td>GEOL-01</td>
<td>Physical Geology</td>
<td>4</td>
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Other pertinent courses are:

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<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ECON-01A</td>
<td>Introduction to Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>BIOL-01</td>
<td>General Biology for Non-Majors</td>
<td>4</td>
</tr>
<tr>
<td>HIST-04AB</td>
<td>History of Civilization: Parts I &amp; II</td>
<td>6</td>
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<tr>
<td>PHSC-01</td>
<td>Physical Science Survey</td>
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</tbody>
</table>

**GEOG-01 PHYSICAL GEOGRAPHY**
(CSU breadth area B1) (IGETC area 5A)
3 units: 3 hours lecture.
Advisory: ENGL-85.

In this course, the basic physical elements of the world are presented. Topics to be covered include topographic maps, earth-sun relationships, and time. Weather processes and climates are correlated to human environments. The forces creating and shaping landforms including volcanism, earthquakes, water, ice, wind, and wave erosion are also topics covered in the class. The location of major physical and cultural places in the world will also be studied. (12/09)

**GEOG-01L PHYSICAL GEOGRAPHY LABORATORY**
(CSU breadth area B1/B3) (IGETC area 5A)
1 unit: 3 hours lab.

This course focuses on the development of skills and analytic thinking in explaining landform processes, weather phenomena, climate patterns, and vegetation patterns. Exercises include contour map drawing, analysis of data and drawing graphs, study of weather maps, stereo photo interpretation, and landform processes. (5/03)

**GEOG-02 WORLD GEOGRAPHY**
(CSU breadth area D5) (IGETC area 4E)
3 units: 3 hours lecture.
Advisory: ENGL-85.

GEOG-02 is a survey of the geography of the world’s regions. The study includes the ways in which environmental resources are utilized to satisfy the needs of mankind. There is emphasis on economic development, population, and food problems. Knowledge of the cultural and economic interaction between regions will enable the student to better understand contemporary world problems and potentials. (5/03)
This curriculum is designed to meet the lower division requirements of most universities offering a major in the earth sciences. This curriculum could lead to careers in fields such as paleontology, mineralogy, geophysics, hydrology, marine geology, and geochemistry, as well as general geology. People trained in these disciplines are employed in research companies as well as by companies associated with mining and petroleum industries.

Program Description
The Geology curriculum is suggested for those students interested in any branch of earth science.

For an Associate in Science Degree in Geology, the student must complete the graduation requirements (PHYS-02A or PHYS-04A and ARCH-01 are required for this course. (2/10)

DEGREE (5/09)
A.S. - Geology (19400.AS)

For an Associate in Science Degree in Geology, the student must complete the graduation requirements (PHYS-02A or PHYS-04A and ARCH-01 are required for this course. (2/10)

Program Student Learning Outcomes
A. A student will, organize, analyze, and interpret, report observations and predictions about the local geology using Geological Society of America conventions and standards.
B. A student will identify and describe common rocks and minerals and relate them to their origin and physical properties.
C. A student will be able to explain, interpret and predict geological structures and landforms within the context of plate tectonic theory.
D. A student will be able to place the events of earth’s history within the geological timescale.

Additional units can be taken as breadth and/or elective courses.

Suggested Sequence: A.S. - Geology (19400.AS)

Additional units can be taken as breadth and/or elective courses.

GEOL-01 PHYSICAL GEOLOGY
(CSU breadth area B1/B3) (IGETC area 5A)
4 units: 3 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This is a beginning course in geology stressing the beneficial and destructive forces of nature and their causes. The course includes a study of the development of landscapes, origin of minerals and rocks, geologic work of ground water, the phenomena of earthquakes, volcanism, metamorphism, and other fundamental concepts of geology. Lab work includes the identification and study of rocks and minerals, study of topographic and geologic maps and aerial photographs, and an introduction to cross-section and profiles of topographic maps. (2/08)

GEOL-02 HISTORICAL GEOLOGY
(CSU breadth area B1) (IGETC area 4G/5A)
4 units: 3 hours lecture, 3 hours lab.
Prerequisite: GEOL-01. Advisory: ENGL-85.
This course covers the geologic history of the earth and the development of plant and animal life as traced through the rock and fossil records. The correlation between geologic changes through time, the uses of the fossil record in determining geologic history, and the formation of economic mineral deposits is emphasized throughout the course. A field trip is required for this course. (2/10)
German
Social Sciences, Humanities and Fine Arts

DEGREE
A.A. - German

Program Description
Studies in foreign languages provide specialists to work in areas such as anthropology, economics, political science, literature, international business, and the travel industry. While teaching is one of the principal areas of employment, other careers may be found in interpreting, translating, research, diplomacy, libraries, publishing, and the service industries.

DEGREE
A.A. - German (11400.AA)

For an Associate in Arts Degree in German students should meet the graduation requirements and complete the 26-unit curriculum as listed below. The courses listed below must be in addition to the basic graduation requirements.

Program Student Learning Outcomes
A. Speaking: Initiate, minimally sustain, and close in a simple way basic communicative tasks.
B. Listening: Distill information from such discourse and demonstrate understanding.
C. Writing: Compose a simple narrative and meet practical needs.
D. Culture: Recognize pervasive values of the culture.
E. Reading: Understand main ideas.

GERM-01 ELEMENTARY GERMAN
(CSU breadth area C2) (IGETC area 6)
5 units: 5 hours lecture.
Advisory: ENGL-84.
This is a beginner’s course. The course will focus on the development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in German the most basic functions of everyday life. (2/10)

GERM-02 ELEMENTARY GERMAN
(CSU breadth area C2) (IGETC area 3B/6)
5 units: 5 hours lecture.
Prerequisite: GERM-01 or two years of high school German.
GERM-02 is a continuation of GERM-01. This course will focus on the further development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in German basic functions of everyday life. (3/10)

GERM-03 INTERMEDIATE GERMAN
(CSU breadth area C2) (IGETC area 3B/6)
5 units: 5 hours lecture.
Prerequisite: GERM-02. Advisory: LRNR-30.
GERM-03 is a continuation of GERM-02. This course reviews and further develops grammatical concepts introduced in GERM-01 and GERM-02, as well as introduces the student to new concepts. Through varied readings, composition, and discussion, the student will increase his or her vocabulary and cultural knowledge. (03/10)

GERM-04 INTERMEDIATE GERMAN
(CSU breadth area C2) (IGETC area 3B/6)
5 units: 5 hours lecture.
Prerequisite: GERM-03. Advisory: LRNR-30.
This course is a thorough review of the fundamentals of reading, writing, speaking and understanding German, designed to aid the student in preparing for advanced studies in German composition, grammar, and conversation, as well as literature in German, history and culture. (3/10)

GERM-39 ADVANCED GERMAN
1 unit: 5 hour lecture, 1.5 hours lab.
Prerequisite: GERM-04. Advisory: LRNR-30.
This course is designed to acquaint the advanced student with specific items of the German language, literature, and culture, including history, political thought, and sociological change. The student will engage in activities that will reinforce knowledge of these areas and critical analysis of current German intellectual and social thinking. This course may be repeated three times. (9/04)
GUIDANCE (GUID)

GUID-30 FOUNDATIONS AND STRATEGIES FOR COLLEGE SUCCESS
(CSU breadth area E)
3 units: 3 hours lecture.
Advisory: ENGL-85. This course is an introduction to the process of transfer from community college to a four-year college or university. Students will research and evaluate colleges and universities based on degrees offered, transfer requirements, application process, housing, financial aid, scholarships, support services, and student life. Students will develop an education plan and a portfolio of personalized research information to assist them in the transfer process. (10/10)

GUID-45 PATHWAYS TO TRANSFER
3 units: 3 hours lecture.
Advisory: ENGL-85. This course is an introduction to the process of transfer from community college to a four-year college or university. Students will research and evaluate colleges and universities based on degrees offered, transfer requirements, application process, housing, financial aid, scholarships, support services, and student life. Students will develop an education plan and a portfolio of personalized research information to assist them in the transfer process. (10/10)

GUID-47 CAREER GUIDANCE
0.5 unit: 9 total hours lecture.
Prerequisite/Advisory: None. This is an introductory course in career planning for high school students. The importance of post-secondary education will be explained and various options will be introduced. Students will develop an understanding of a wide assortment of career information resources, both written and computer-assisted. This course is offered on a pass/no pass basis. (2/98)

GUID-48 LIFE AND CAREER PLANNING
3 units: 3 hours lecture.
Advisory: ENGL-85. This is a structured sequential course in life and career planning. Experiences are provided that encompass education, occupation, and job trends. The total individual is explored; issues such as life roles, values, goals, life styles, preferences, coping skills, and personal barriers as they relate to decisions will be covered. (4/03)

GUID-48A CAREER SELF-ASSESSMENT
1 unit: 1 hour lecture.
Advisory: ENGL-85. In this course students will learn to appraise their self-esteem, values, skills and personality, and understand the implication of these factors in the selection of a vocational/educational goal. (4/03)

GUID-48B CAREER RESEARCH
1 unit: 1 hour lecture.
Advisory: ENGL-85. Research is a necessary component in career decision making. In this course the student will develop an understanding of a wide assortment of career information resources, both written and computer-assisted. The focus of the course is to introduce the student to the use of the most recent career-related technologies. (2/10)

GUID-48C EMPLOYMENT SEARCH AND READINESS SKILLS
1 unit: 1 hour lecture.
Advisory: ENGL-85. In this course the student will be introduced to the importance and preparation of job applications, resumes, interview techniques, and other strategies for successfully obtaining employment. (4/03)

GUID-49A-ZZ SPECIAL TOPICS IN GUIDANCE
0.5 - 3 units: 0.5 - 3 hours lecture, 0-9 hours lab.
Advisory: ENGL-85.
This course is designed to address special topics in guidance to meet the needs of students. Specific classes will be offered to help students understand and develop personal, social, and academic skills useful in the educational environment. (11/05)

GUID-52 COLLEGE SUCCESS STRATEGIES FOR STUDENT ATHLETES
3 units: 3 hours lecture.
Advisories: ENGL-81, ENGL-84. This course provides the student athlete with an opportunity to cultivate the skills, values, and attitudes necessary to become a confident, capable, and successful student and athlete. The student will identify his/her educational and athletic goals and will develop an appropriate plan for achieving those goals. Through learning and study strategy inventories the student will assess his/her attitude, motivation, time management skills, basic study skills, test anxiety, etc. Each student will develop an individualized action plan to remediate problem areas. Students will examine the roles of procrastination, self-responsibility, and multiple intelligences and will be introduced to various problem solving and decision-making strategies. Appropriate classroom behavior and personal conduct will be stressed and behavior modification techniques will be studied. National Collegiate Athletic Association and National Association for Intercollegiate Athletics eligibility and transfer rules will be discussed, as will the California Community College athletic eligibility rules. This course is strongly recommended for all student athletes. (11/05)

GUID-54 FOUNDATIONS AND STRATEGIES FOR ACADEMIC RECOVERY
3 units: 3 hours lecture.
Advisories: ENGL-81, ENGL-81L, ENGL-84.
This course is appropriate for students wishing to improve their academic standing. In this course the students will have an opportunity to cultivate the skills, values, and attitudes necessary to become confident, capable students. Each student will identify his/her educational goal and develop an appropriate plan for achieving that goal. Using a learning and study strategy inventory, each student will assess his/her attitude, motivation, time management skills, test anxiety, etc., and will develop an action plan to remediate problem areas. Students will examine the roles of procrastination, multiple intelligences, self-responsibility and health and wellness related to academic success. Academic policies will be addressed and strategies to get off and stay off probation, such as, informed decision-making, problem solving, classroom behavior, and behavior modification will also be studied. This course is recommended for all students on academic and/or progress probation. (2/10)

GUID-70A-ZZ SPECIAL TOPICS IN GUIDANCE
0.5 - 3 units: 0.5 - 3 hours lecture, 0-9 hours lab.
Advisories: ENGL-81, ENGL-84.
This course is designed to address special topics in guidance to meet the needs of students. Specific classes will be offered to help students understand and develop personal, social, and academic skills useful in the educational environment. (11/05)
GUID-80 COLLEGE SURVIVAL
1 unit: 1 hour lecture.
Advisories: ENGL-80, ENGL-83.
College Survival is a course designed to increase the student's success in college and/or employment by assisting the student in obtaining information and skills necessary to reach his/her educational or employment objectives. (12/05)

GUID-85 FIRST YEAR SUCCESS
.50 unit: .50 hour lecture.
Advisories: ENGL-80, ENGL-83.
This course is designed to introduce first year students to strategies for college success through an exploration of college policies, programs, services and academic expectations. Students will learn about Merced College's academic programs, student services, academic expectations and policies, student rights and responsibilities, and campus activities. Students will receive a brief introduction to academic success strategies such as time management, goal setting, and study skills. Pass/no pass only. (2/10)

Health
Allied Health, Business, and Public Safety

HEALTH (HLTH)

HLTH-10 CONTEMPORARY HEALTH
(CSU breadth area E)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course surveys the human condition from birth to death. Emphasis is placed on the impact of personal choice throughout life. Mental health, stress, alcohol, drugs, tobacco, disease processes, nutrition, fitness, sexuality, aging, environmental issues, and other related topics are studied and examined. The student is challenged to assume responsibility for his or her own health, well being, and lifestyle. (5/07)

HLTH-11 ADVANCED FIRST AID AND EMERGENCY CARE
3 units: 3 hours lecture.
Advisory: ENGL-85.
This is a class designed to teach theory and practice in the techniques of administering first aid to victims of accidents and illness. This class fulfills requirements for Advanced First Aid and Emergency Care, Red Cross Certificates, and CPR Certification. (12/06)

HLTH-15 DRUGS, ALCOHOL, AND TOBACCO
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course will give students a basic understanding of the psychophysiological effects of drugs, alcohol, and tobacco. Included in the study will be use patterns, individual and societal problems that arise from abuse, and the medicinal effects. Personal coping skills will be included that can help individuals develop drug-free lifestyles. (12/06)

HLTH-16 HEALTH EDUCATION
(CSU breadth area E)
1 unit: 1 hour lecture.
Advisory: ENGL-85.
This course covers the basics of physiological and sociological effects of alcohol, tobacco, narcotics, and drug use. Basic nutrition will also be covered. (1/06)
The Associate in Arts Degree in Health Sciences is intended for students planning to transfer into an Allied Health program. To earn the degree, a student must complete the basic graduation requirements (CHEM-02A is recommended for science breadth) and the courses listed below.

Program Student Learning Outcomes
A. Understand and describe the basic fundamental principles of body structure and function in health and disease and communicate this knowledge in both written and oral form.
B. Understand and implement the scientific method.
C. Research, comprehend and analyze etiologic factors; and then communicate the evaluation supported by a documented review of relevant literature.
D. Use critical thinking skills based on a chemical, structural, and functional foundation to gather and critically analyze, describe, and disseminate quantitative and qualitative information.

Units

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<tr>
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<tr>
<td>BIOL-01</td>
<td>General Biology for Non-Majors</td>
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<tr>
<td>or BIOL-02</td>
<td>Human Biology</td>
<td>4</td>
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<tr>
<td>CHEM-02B</td>
<td>Introduction to Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>NUTR-10</td>
<td>Nutrition</td>
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And select eight units from the following:

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<td>BIOL-16</td>
<td>General Human Anatomy</td>
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<tr>
<td>BIOL-18</td>
<td>Principles of Physiology</td>
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</tr>
<tr>
<td>BIOL-20</td>
<td>Microbiology</td>
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Suggested Course Sequence: A.A. - Health Sciences (12300.AA)
Additional units can be taken as breadth and/or elective courses.

Fall 1

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<td>BIOL-02</td>
<td>Human Biology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM-02A</td>
<td>Introductory Chemistry</td>
<td>4</td>
</tr>
<tr>
<td>NUTR-10</td>
<td>Nutrition</td>
<td>3</td>
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Spring 1

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<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CHEM-02B</td>
<td>Introduction to Chemistry</td>
<td>4</td>
</tr>
</tbody>
</table>

Additional units can be taken as breadth and/or elective courses.

Fall 2

Additional units can be taken as breadth and/or elective courses.

Spring 2

Additional units can be taken as breadth and/or elective courses.
HVAC Technology
Career and Technical Education

DEGREES
A.A. - Commercial Refrigeration Technician
A.A. - HVAC Technician

CERTIFICATES
Commercial Refrigeration Technician
HVAC Technician

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Heating, Ventilation, and Air conditioning / Refrigeration (HVAC/R) Program at Merced College is a comprehensive training program. The student will become knowledgeable in Refrigeration Systems, Basic Electrical Concepts, Air Systems & Air Conditioning Fundamentals, Heating Systems, and Commercial Refrigeration. The students will learn from lecture as well as laboratory experience. The instructor has practical experience in the field and the formal education to provide the students with the necessary skills as well as equip them for HVAC/R employment.
Students will use the College HVAC/R Simulators during classroom training. Successful completion of the class will result in attainment of a Merced College Certificate of Completion.
The Heating, Ventilation, Air Conditioning / Refrigeration Program are designed to meet the increasing need within the local Business Community for trained technicians.

Career Opportunities
An Advisory Board was formed with the Private Industry Training Department and local businesses to offer internship opportunities to students in the program. This program prepares students for a variety of different fields: Heating and Air Conditioning Technician, Industrial Maintenance where heating, air conditioning, and ventilation is a requirement, Commercial Refrigeration Technician, HVAC specialist or maintenance in food processing industries as Refrigeration technicians, heating and air conditioning sales, entry level skills into HVAC Union apprenticeship, schools, hospitals, hotel / motel.

DEGREE
A.A. - Commercial Refrigeration Technician
(09401.AA)

An Associate in Arts Degree in Commercial Refrigeration Technician is available for students who meet the graduation requirements, and complete the options listed below.

Program Student Learning Outcomes
A. Explain the basic theory of the subject matter or HVAC/R system for the course of instruction based on industry standards.
B. Analyze a scenario based upon an HVAC/R equipment system failure/problem/complaint.
C. Employ a systematic approach to troubleshooting a HVAC/R system malfunction and prepare an effective repair solution.
D. Analyze component failures to determine the root cause of

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<td></td>
<td>ELCT-41 Industrial Motor and Equipment Control</td>
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<td>ELCT-42 Programmable Logic Controllers</td>
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<td></td>
<td>ELCT-47 Electrical Motors, Generators, Transformers, and AC</td>
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<td></td>
<td>Distribution</td>
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<td></td>
<td>ELCT-52 Introduction to Electricity and Electronics</td>
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<td>INDT-40 Commercial Refrigeration Design, Installation, and Service</td>
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<td>INDT-51</td>
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<td></td>
<td>MATH-B Applied Mathematics</td>
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<td></td>
<td>WELD-06 Fundamentals of Oxy-Fuel &amp; Shielded Metal Arc Welding</td>
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<tr>
<td></td>
<td>WELD-07</td>
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</table>
A.A. - HVAC Technician (09400.AA)

An Associate in Arts Degree in HVAC Technician is available for students who meet the graduation requirements, and complete the options listed below.

Program Student Learning Outcomes
A. Explain the basic theory of the subject matter or HVAC/R system for the course of instruction based on industry standards.
B. Analyze a scenario based upon an HVAC/R equipment system failure/problem/complaint.
C. Employ a systematic approach to troubleshooting a HVAC/R system malfunction and prepare an effective repair solution.
D. Analyze component failures to determine the root cause of the component failure.
E. Verify if the path of repair was correct by testing and/or completing a work order/report.
F. Demonstrate the correct usage of tools/supplies required to diagnose/repair a malfunction.

ELCT-47 Electrical Motors, Generators, Transformers, and AC Distribution .................................................. 3
ELCT-52 Introduction to Electricity and Electronics ................................................. 3
INDT-49 Electrical Codes and Ordinance............................................................... 3
INDT-50 HVAC - Heating and Control Systems ...................................................... 6
INDT-51 Ventilation and Air Conditioning ............................................................... 6
INDT-52 Refrigerant Usage Certification - EPA Requirements ............................... 1
INDT-71 JJ HVAC Sheet Metal I ................................................................. 1
MATH-B Applied Mathematics............................................................... 5
WELD-06 Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding .............. 3
WELD-07 Fundamentals of T.I.G. and M.I.G. Welding ............................................... 3

CERTIFICATE

Commercial Refrigeration Technician (09401.CT)

A Certificate of Achievement will be awarded upon successful completion of the full certificate options listed below. For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes
A. Explain the basic theory of the subject matter or HVAC/R system for the course of instruction based on industry standards.
B. Analyze a scenario based upon an HVAC/R equipment system failure/problem/complaint.
C. Employ a systematic approach to troubleshooting a HVAC/R system malfunction and prepare an effective repair solution.
D. Analyze component failures to determine the root cause of the component failure.
E. Verify if the path of repair was correct by testing and/or completing a work order/report.
F. Demonstrate the correct usage of tools/supplies required to diagnose/repair a malfunction.

ELCT-41 Industrial Motor and Equipment Control.................................................. 3
ELCT-42 Programmable Logic Controllers....................................................... 2
ELCT-47 Electrical Motors, Generators, Transformers, and AC Distribution .............. 3
ELCT-52 Introduction to Electricity and Electronics ................................................. 3
INDT-40 Commercial Refrigeration Design, Installation, and Service .............. 3
INDT-49A Electrical Codes and Ordinances....................................................... 3
INDT-51 Ventilation and Air Conditioning ....................................................... 6
MATH-B Applied Mathematics............................................................... 5
WELD-06 Fundamentals of Oxy-Fuel & Shielded Metal Arc Welding ....................... 3
WELD-07 Fundamentals of T.I.G. and M.I.G. Welding ............................................... 3
WELD-08 Fundamentals of T.I.G. and M.I.G. Welding ............................................... 3

CERTIFICATE

HVAC Technician (09400.CT)

A Certificate of Achievement will be awarded upon successful completion of the full certificate options listed below. For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes
A. Explain the basic theory of the subject matter or HVAC/R system for the course of instruction based on industry standards.
B. Analyze a scenario based upon an HVAC/R equipment system failure/problem/complaint.
C. Employ a systematic approach to troubleshooting a HVAC/R system malfunction and prepare an effective repair solution.
D. Analyze component failures to determine the root cause of the component failure.
E. Verify if the path of repair was correct by testing and/or completing a work order/report.
F. Demonstrate the correct usage of tools/supplies required to diagnose/repair a malfunction.

DRFT-44 Print Reading and Sketching............................................................... 3
ELCT-47 Electrical Motors, Generators, Transformers, and AC Distribution .............. 3
ELCT-52 Introduction to Electricity and Electronics ................................................. 3
INDT-49 Electrical Codes and Ordinance............................................................... 3
INDT-50 HVAC - Heating and Control Systems ...................................................... 6
INDT-51 Ventilation and Air Conditioning ............................................................... 6
INDT-52 Refrigerant Usage Certification - EPA Requirements ............................... 1
INDT-71 JJ HVAC Sheet Metal I ................................................................. 1
MATH-B Applied Mathematics............................................................... 5
WELD-06 Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding .............. 3
WELD-07 Fundamentals of T.I.G. and M.I.G. Welding ............................................... 3
**DEGREE**  
**A.A. - History**

**Program Description**  
The following history program is designed for the first two years of work required for students majoring in history who are interested in obtaining either a secondary or elementary teaching credential. Students should work with their counselor for specific transfer requirements.

**DEGREE**  
**A.A. - History (22300.AA)**

For an Associate in Arts Degree in History, students must meet the graduation requirements and complete the 18-unit curriculum from the two lists below (3-12 units from the first list, and 6-15 units from the second list). The courses listed below must be in addition to the basic graduation requirements.

**Program Student Learning Outcomes**  
A. Analyze historical processes that shape individuals and communities, drawing on detailed knowledge about the history of the United States and other parts of the world.
B. Research and think critically about varieties of experience found in the historical record, exploring diversity as a critical component of history.
C. Develop and define historical arguments, understanding the philosophical assumptions of historical interpretation.
D. Articulate their understanding of the past clearly and convincingly.
E. Incorporate new digital and multimedia formats in the practice and presentation of history.
F. Apply historical analysis as a framework to further both lifelong learning and civic engagement.

Students must select a minimum of three units from the following (depending on the student’s choice of four-year institution):  

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<th>Fall</th>
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<th>History Elective</th>
<th>History of Civilization: Part II</th>
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Recommended Sequence: A.A. - History (22300.AA)

**HISTORY (HIST)**

**HIST-04A HISTORY OF CIVILIZATION: PART I**  
(CSU breadth area C2/D6) (IGETC area 3B)  
3 units: 3 hours lecture.  
Advisory: ENGL-85.  
This course provides a broad historical survey of humanity’s social, political, economic, and intellectual experiences for all major world civilizations from pre-history through approximately 1650. (11/09)

**HIST-04B HISTORY OF CIVILIZATION: PART II**  
(CSU breadth area C2/D6) (IGETC area 3B)  
3 units: 3 hours lecture.  
Advisory: ENGL-85.  
This course provides a broad historical survey of humanity’s social, political, economic and intellectual experiences for all major world civilizations from the 17th century to the present. (2/06)

**HIST-05 HISTORY OF EUROPE FROM 1901 TO THE PRESENT**  
3 units: 3 hours lecture.  
Advisory: ENGL-85.  
HIST-05 is a one-semester survey course on 20th century and early 21st century European history (1901 to the present). The political, economic, cultural, and social development of 20th century and recent European history will be covered. There will be emphasis on the traumatic changes brought about by political realignment, colonialism, war, revolution, and economic upheaval. (12/06)

**HIST-08A HISTORY OF THE AMERICAS PART I: PREHISTORY TO INDEPENDENCE**  
(CSU breadth area C2/D3/D6) (IGETC area 3B/4C)  
3 units: 3 hours lecture.  
Advisories: ENGL-85; LRNR-30; PHIL-10.  
This course provides a broad historical survey of Latin America from pre-history to independence. The course covers pre-Columbia Amerindian civilizations and cultures; Iberian background, New World conquests, and New World occupation; and colonial development of Latin America’s Hispanic cultures and institutions. (12/03)
HIST-08B HISTORY OF THE AMERICAS PART II: INDEPENDENCE TO THE PRESENT
(CSU breadth area C2/D6) (IGETC area 3B/4F)
3 units: 3 hours lecture.
Advisories: ENGL-85; LRNR-30; PHIL-10.
This course provides a broad historical survey of modern American nations with emphasis on Latin America from 1821 to the present. Special emphasis is given to the political evolution of these nations and the social and economic institutions that characterize the region. (2/06)

HIST-09A INTRODUCTION TO EAST ASIAN CIVILIZATION: CHINA
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Advisories: ENGL-85; LRNR-30; PHIL-10.
This course provides a broad historical survey of China, the Far East's oldest civilization, from prehistoric times to the present, with emphasis on China's cultural achievements and contributions to both Eastern and Western civilizations. (12/03)

HIST-09B INTRODUCTION TO EAST ASIAN CIVILIZATION: JAPAN
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Advisories: ENGL-85.
This course provides a broad historical survey of Japan from prehistoric times to the present. The course includes the study of traditional and modern Japan's significant institutions, cultural achievements, and contributions to both Eastern and Western civilizations. (9/06)

HIST-17A UNITED STATES HISTORY AND UNITED STATES CONSTITUTION
(CSU breadth area C2/D6/F1/F2) (IGETC area 3B/4F)
3 units: 3 hours lecture.
Advisories: ENGL-01A.
This is an extensive survey course of United States history from the period of exploration to the Reconstruction Period. The course covers the social, political, economic, and constitutional development of the nation. (4/05)

HIST-17AH HONORS UNITED STATES HISTORY AND UNITED STATES CONSTITUTION
(CSU breadth area C2/D6/F1/F2) (IGETC area 3B/4F)
3 units: 3 hours lecture.
Limitation on enrollment: Enrollment in the Honors Program. (See the college catalog for a description of enrollment requirements.)
Advisories: ENGL-01A; PHIL-13H/ENGL-13H.
This course covers the social, political, economic and constitutional development of the nation. There will be an emphasis on academic rigor, analytical research, writing, critical thinking, and collaborative learning. (11/03)

HIST-17B UNITED STATES HISTORY AND CALIFORNIA STATE AND LOCAL GOVERNMENT
(CSU breadth area C2/D6/F1/F2) (IGETC area 3B/4F)
3 units: 3 hours lecture.
Advisories: ENGL-01A.
This course is a continuation of HIST-17A from the end of the Reconstruction Period in 1877 to the present. It examines our national, state, and local history and government from the late 19th century to the present. The course covers the social, political, economic, and constitutional development of the nation. (4/05)

HIST-17BH HONORS UNITED STATES HISTORY AND CALIFORNIA STATE AND LOCAL GOVERNMENT
(CSU breadth area C2/D6/F1/F2) (IGETC area 3B/4F)
3 units: 3 hours lecture.
Limitation on enrollment: Enrollment in the Honors Program. (See the college catalog for a description of enrollment requirements.)
Advisories: ENGL-01A; PHIL-13H/ENGL-13H.
This course examines our national, state, and local history and government from the late 19th century to the present. There will be an emphasis on academic rigor, analytical research, writing, critical thinking, and collaborative learning. (11/03)

HIST-21 THE HISTORY OF MINORITIES IN AMERICA -- ETHNIC GROUPS, 19TH CENTURY TO PRESENT
(CSU breadth area D3/D6) (IGETC area 4C/4F)
3 units: 3 hours lecture.
Advisories: ENGL-01A.
This course surveys the historical and legal position of ethnic groups 1800 to the present in America. Emphasis is placed on the role of minorities in American society, the development of ethnic identity, and the contributions of minority Americans. (1/06)

HIST-22 HISTORY OF MINORITIES -- BLACK EMPHASIS
(CSU breadth area D3/D6/F2) (IGETC area 4C/4F)
3 units: 3 hours lecture.
Advisories: ENGL-85; LRNR-30; PHIL-10.
This course is a political and social history of American society and culture as seen from the Black perspective. It is a survey course covering the period from 1600 to the present. This course presents in-depth the historical background and development of American institutions and ideals. (11/03)

HIST-23 THE HISTORY OF HISPANIC-AMERICANS IN THE SOUTHWEST U.S.
(CSU breadth area D3/D6) (IGETC area 4C/4F)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is an introduction to the history of the Mexican-American, and is designed to examine the contributions of Hispanics to the U.S. Emphasis will be placed upon the exploration, settlement, and ideology of Hispanics throughout the U.S. The course has pragmatic and relevant historical coverage that includes pre-Columbian to Hispanic civil rights movements. (4/06)

HIST-24 HISTORY OF THE NATIVE AMERICAN
(CSU breadth area D3/D6) (IGETC area 4C/4F)
3 units: 3 hours lecture.
Advisories: ENGL-01A.
This course is an ethnic historical survey of Native Americans. Special emphasis will be placed on major Native American groups, the impact of European contact, social-cultural patterns and organizations, government policies, reservation status, Native American contributions to the development of American societies, and contemporary issues and problems. (1/06)

HIST-29 HISTORY OF CALIFORNIA
(CSU breadth area D6)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course surveys the historical development of California from pre-Columbian Indians through Spanish, Mexican, and American rule to the present. (12/08)

HIST-39A EXPLORING CALIFORNIA'S PAST: PART A
1 unit: 18 total hours.
Prerequisite/Advisory: None.
"Exploring California's Past" is a series of three one-unit internet courses surveying California's history from before European contact to the 20th century. HIST-39A explores California's peoples, cultures, and historical developments from before European contact through the Mexican-American War. This course requires internet literacy and an actual visit to a California historic site. (4/08)

HIST-39B EXPLORING CALIFORNIA'S PAST: PART B
1 unit: 18 total hours.
Prerequisite/Advisory: None.
"Exploring California's Past" is a series of three one-unit internet courses surveying California's history from before European contact to the 20th century. HIST-39B explores California's peoples, cultures, and historical developments from California's gold rush to the completion of the transcontinental railroad. This course requires internet literacy and an actual visit to a California historic site. (4/08)
### HIST-39C  EXPLORING CALIFORNIA’S PAST: PART C

1 unit: 18 total hours.  
Prerequisite/Advisory: None.  
"Exploring California’s Past" is a series of three one-unit internet courses surveying California’s history from before European contact to the 20th century. HIST-39C explores California’s peoples, cultures, and historical developments from the 1870’s to modern times. This course requires internet literacy and an actual visit to a California historic site. (4/08)

### HIST-80AB  BASIC AMERICAN HISTORY

3 units: 3 hours lecture.  
Prerequisite/Advisory: None.  
This course is a basic American history course for non-transfer students. HIST-80A includes the period from the discovery of America to the Reconstruction Period. HIST-80B covers the period from Reconstruction to the present.

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#### Hmong  
Social Sciences, Humanities and Fine Arts

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<td>This course is a study of the fundamentals of pronunciation, audio-lingual training, and phonology; syllabication; appreciation of basic elements of the Hmong culture; use of the most frequent words in Hmong; basic sentences in conversation; reading and mastery of verb forms; practical vocabulary through conversation and practice in class and at home; elementary composition. (5/06)</td>
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<td>HMNG-02</td>
<td>ELEMENTARY HMONG</td>
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<td>This course is a continuation of HMNG-01. The focus will be on the further development of listening, speaking, reading, and writing in a cultural context. There will be intensive use of Hmong grammar, written composition, and oral communication. Selections from Hmong literature and history will be read and discussed in Hmong. Stress is given to reading, writing, speaking, and understanding Hmong as these communication skills apply to practical situations. (1/02)</td>
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Dean  
John Albano  
Phone  
(209) 384-6073  
Counseling  
(209) 384-6314  
Area Office  
IAC Social Sciences Bldg, 2nd floor  
Cooperative Work Experience  
(209) 384-6364
Honors
Social Sciences, Humanities and Fine Arts

TAKING THE HONORS CHALLENGE
Honors Classes at Merced College are designed to provide learning environments that foster creative thinking and critical discussion. The purpose of Honors Classes is to offer challenging assignments and learning activities that will spark intellectual curiosity, while sharpening the skills required for transfer and career success.

Any new student with a 3.5 cumulative grade point average, or any continuing student with a 3.25 cumulative grade point average, may enroll in honors classes. Students who do not meet one of these enrollment requirements may also enroll in individual honors classes by successfully completing the challenge process. Inquiries regarding the Honors Program should be directed to Dr. Max Hallman, Honors Program Coordinator, at (209) 384-6327 or at hallman.m@mccd.edu.

Advantages of Taking Honors Classes:
- Smaller classes that provide the opportunity for more individualized instruction and more stimulating discussion.
- Honors recognition on transcripts to underscore achievement.
- Special academic advising.
- Opportunities to attend a variety of seminars, cultural events, and conferences.
- Eligibility to apply for McConnell Honors Scholarships.

Projected Honors Course Offerings

Fall
COMM-01H Honors Fundamentals of Speech .............................. 3
HIST-17AH Honors United States History and United States Constitution ................................................. 3
HNRS-40 Honors Seminar ...................................................... 2
HUM-01H Honors Studies in Humanities - Ancient Through Renaissance ...................................................... 3
PHIL-01H Honors Introduction to Philosophy ......................... 3

Spring
BIOL-04AH Honors Fundamentals of Biology - The Cell and Evolution ................................................................. 4
ENGL-13H Honors Critical Reasoning and Writing .................... 3
HIST-17BH Honors U.S. History and California State & Local Government ......................................................... 3
HUM-02H Honors Studies in Humanities - Renaissance to Present ................................................................. 3
HNRS-40 Honors Seminar ...................................................... 2
MATH-02H Honors Precalculus ................................................. 4
PHIL-13H Honors Critical Reasoning and Writing .................... 3
PSYC-01AH Honors Introduction to Psychology ....................... 3

Classes Approved for Honors
(Course descriptions of these classes can be found under the appropriate discipline.)

BIOL-04AH Honors Fundamentals of Biology - The Cell and Evolution ................................................................. 4
BIOL-04BH Honors Diversity of Life ........................................ 5
HIST-13H Honors Critical Reasoning and Writing .................... 3
HIST-17AH Honors United States History and United States Constitution ......................................................... 3
HIST-17BH Honors U.S. History and California State & Local Government ......................................................... 3
HNRS-40 Honors Seminar ...................................................... 2
HUM-01H Honors Studies in Humanities - Ancient Through Renaissance ................................................................. 3
HUM-02H Honors Studies in Humanities - Renaissance to Present ................................................................. 3
MATH-02H Honors Precalculus ................................................. 4
PHIL-01H Honors Introduction to Philosophy ......................... 3
PHIL-13H Honors Critical Reasoning and Writing .................... 3
PSYC-01AH Honors Introduction to Psychology ....................... 3

HONORS (HNRS)

HNRS-40 HONORS SEMINAR
2 units: 2 hours lecture.
Limitation on enrollment: Enrollment in the Honors Program.
This course will focus on the in-depth discussion and analysis of a topic of interest to honors program students. Students may take the class four times. (2/12)
Horse Management
Career and Technical Education

DEGREES
A.A. - Horse Management
A.S. - Horse Management

CERTIFICATES
Horse Management
Horse Shoeing - Beginning Certificate
Horse Shoeing - Advanced Certificate

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%2123

Program Description
The Horse Management Program at Merced College is designed to meet the need for trained personnel in a broad range of occupational opportunities involved with or related to the horse industry.

Students enrolled in the Merced College Horse Management Program study theory and apply practical experiences in a variety of classes that are related to the horse. Students receive a platform of experiences which help prepare them for a very competitive business.

The diverse curriculum includes: Agricultural Sales and Accounting, Animal Nutrition, Breeding and Disease, Beginning and Intermediate Horsemanship, and Specialized Horse Training, as well as Tack Repair, Hoof Care, and Equipment Construction. The safety and well-being of both horse and rider is emphasized in all courses. These classes give the student a wide view of Agriculture in general and provide in-depth experience in dealing with the problems to be faced when raising horses.

Merced College offers an 18-week Horseshoeing program meeting 11 hours per week. Each week 2 hours of lecture and 9 hours of laboratory experience is required.

The course teaches the actual trimming and shoeing of horses, iron and forge work introduces the construction of man-made horseshoes. The anatomy and physiology of the equine foot and leg, horse psychology, and proper hoof balance in relation to conformation are also covered. Approximately 700 horses and mules are trimmed per semester by Merced College students. Horses are brought to the college to be shod. Students also participate in working field trips to various breeding farms, ranches, and pack stations.

Additional courses may be taken if desired in the afternoon or evening during the semester. Examples of courses that may be of interest to horseshoers are: Welding, Animal Nutrition, Horse Husbandry, Horsemanship, and Hoof Care and Trimming (offered during our Fall Semester).

Career Opportunities
The expansion in the number of horses throughout the United States in the past ten years has resulted in providing new, and a greater number of present career opportunities in all areas associated with horse management.

Trained graduates are in demand nationwide in the areas of horse training, horse breeding farms, horse farm management, equitation instruction, research, assistants to veterinarians, and sales for allied fields, as well these additional occupations: Stallion Manager, Ranch Manager, Horseshoer, Animal Packer, Back Country Ranger, Ranger Horse Patrol, and Ranch Jobs (cowboy).

DEGREE
A.A. - Horse Management (01250.AA)

The Associate in Arts Degree is available upon satisfactory completion of the graduation requirements and the 23-unit core.

Program Student Learning Outcomes
A. Application of scientific principles to Horse Management.
B. Ability to learn and develop skills to deal with potential changes and diversity in Horse Management and related industries.
C. Awareness of and appreciation of ethical practices and diversity within the Equine Industry.

Core:

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<thead>
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<th>Units</th>
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<tr>
<td>AGBS-12</td>
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<tr>
<td>ANSC-11</td>
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<tr>
<td>MECH-06</td>
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<td>MECH-31</td>
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</table>

- Horse Management
DEGREE
A.S. - Horse Management (01250.AS)

The Associate in Science Degree in Horse Management is available upon satisfactory completion of the graduation requirements and 30 units from the following list which includes the core courses.

Program Student Learning Outcomes
A. Given a variety of feedstuffs, identify each sample by name and categorize which nutrient categories they fit into.
B. Develop a herd health program and timetable schedule which will identify diseases and parasites to vaccinate and treat for.
C. Saddle, bridle, mount and demonstrate basic equitation skills and abilities.

Core: Units
AGBS-12 Agricultural Accounting ................................................. 3
ANSC-11 Elements of Animal Nutrition ........................................... 3
ANSC-16 Animal Disease and Parasite Control .................................. 3
ANSC-39 People and Livestock in the Sierras (deactivated 12/06) ........... 3
ANSC-46A Specialized Horse Training ............................................. 4
CROP-13 Forage Crops ................................................................. 3
MECH-06 Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding ................................................................. 3
MECH-31 Equipment Safety ............................................................ 1

Plus seven units from the following electives:
AGBS-18 Agricultural Computer Applications .................................... 3
ANSC-12 Livestock Breeding and Selection ....................................... 3
ANSC-13 Animal Disease and Parasite Control .................................. 3
ANSC-40 Beginning Horsemanship (Western) ..................................... 2
ANSC-41 Intermediate Horsemanship (Western) ................................. 2
ANSC-46B Specialized Horse Training ............................................. 4
ANSC-47A Back Country Animal Management ..................................... 1
ANSC-48 Tack Repair ................................................................. 1
ANSC-52 Hoof Care and Trimming ................................................. 2
MECH-12 Agriculture Equipment .................................................. 3

CERTIFICATE
Horseshoeing - Beginning Certificate (01301.CO)

A Certificate of Specialization will be awarded upon the satisfactory completion of ANSC-50 (Horseshoeing).

Program Student Learning Outcomes
A. Be able to understand useful and practical knowledge and information related to Farrier science.
B. Physically perform the skills at the forge and working with the horses.
C. Interact with professional equine industry professionals, utilizing appropriate vocabulary.

ANSC-50 Horseshoeing .................................................................... 5

CERTIFICATE
Horseshoeing - Advanced Certificate (01302.CO)

A Certificate of Specialization will be awarded upon the satisfactory completion of ANSC-51 (Advanced Horseshoeing).

Program Student Learning Outcomes
A. Communicate useful and practical knowledge and information related to Farrier Science.
B. Physically perform the skills at the forge and working with the horses.
C. Demonstrate acceptable attitudes and responsibilities towards the profession.
D. Satisfy the requirements of the Merced College Farrier certification.

ANSC-51 Advanced Horseshoeing ................................................... 5
DEGREE
A.A. - Human Services

CERTIFICATE
Human Services

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60%2123

Program Description
The Human Services A.A. program provides a basic academic background for the student seeking a career working with people in a variety of social settings. The program is based on a synthesis of knowledge from several social sciences, together with methodologies of intervention at the individual, group and community levels. The Human Service profession promotes improved service delivery systems by addressing not only the quality of direct services, but by also seeking to improve accessibility, accountability, coordination, and collaboration among professionals and agencies to attain the highest quality of life with the least amount of intervention.

Over a two year course of study students engage in a rich learning experience to explore theory, and acquire knowledge and skills in intervention, community organization, social welfare policy, and basic social work strategies. In addition, students are guided to a better understanding of self, and their abilities to make a difference in individuals, families and communities.

As a basic introductory program many graduates find entry level positions as advocates, youth workers, volunteer coordinators, human resource specialists, fundraisers or advocacy specialists for victims of child abuse, domestic violence, homelessness, or other social issues. A significant number of graduates from this program are employed in agencies, federal, state and non-profit organizations, for-profit enterprises, and a variety of societal settings.

Many graduates continue their education completing B.A. or B.S. degrees in social work, counseling, psychology, vocational rehabilitation, public administration or education. Many other students have gone on to complete master’s degrees in the above mentioned fields and hold professional positions as supervisors, administrators, case managers, adoption counselors, child and adult protective service social workers, policy analyst, youth counselors and behavior specialist, to name a few.

DEGREE
A.A. - Human Services (21500.AA)

The Associate in Arts Degree in Human Services is available for students who meet the graduation requirements and complete the following required courses.

Program Student Learning Outcomes
A. Describe the historical development of social work, social welfare, and human services systems.
B. Explain and analyze contemporary policies and social problems and services available to meet the needs of various disadvantaged populations.
C. Identify and discuss the values and ethics of the profession.
D. Identify models of service delivery, including community resources, with specific emphasis on the Human Services model.
E. Understand and identify the roles of a human services professional, emphasizing the Helping Process, basic helping skills, identifying behaviors of challenging clients, and the application of crisis intervention strategies.

Students must take two of the three following courses:
ANTH-10 Southeast Asian Culture: Emphasis Hmong Culture 3
HIST-22 History of Minorities -- Black Emphasis 3
HIST-23 History of Hispanic Americans in the Southwest US 3

Students must also choose one course from the following electives:
ADST-41 Introduction to Addiction Studies 3
CRIM-33 Family Violence 3
PSYC-01A Introduction to Psychology 3
PSYC-09 Human Development 3
SOC-28 Marriage and the Family 3
SCSC-01 Introduction to Social Science 3

*Offered in the spring semester only.
**Offered in the fall semester only.
A Certificate of Achievement will be awarded upon the satisfactory completion of the curriculum listed below.

Program Student Learning Outcomes

A. Recognize community resources that facilitate the helping process, including the importance of advocating for community empowerment, participation, and change.

B. Explain the historical development and philosophical paradigms of the social work, social welfare, and human services systems.

C. Understand and identify the roles of a human services professional, emphasizing the Helping Process, basic helping skills, identifying behaviors of challenging clients, and the application of crisis intervention strategies.

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<td>CPSC-30</td>
<td>Computer Applications</td>
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<td>HMSV-50</td>
<td>Survey and Utilization of Community Resources</td>
<td>3</td>
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<tr>
<td>HMSV-51</td>
<td>Human Behavior and the Helping Process</td>
<td>3</td>
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<tr>
<td>HMSV-61</td>
<td>Social Welfare</td>
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<tr>
<td>PSYC-23</td>
<td>Personal and Social Adjustment</td>
<td>3</td>
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<tr>
<td>PSYC-51</td>
<td>Applied Psychology</td>
<td>3</td>
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- ANTH-10
- HIST-22
- HIST-23

Students must also choose one course from the following electives:

- ADST-41
- CRIM-33
- PSYC-01A
- PSYC-09
- SOC-28
- SCSC-01

This course is designed to introduce students who are seeking careers in Human Services to community resources that facilitate the helping process. Students will become acquainted with various agencies, organizations (profit & nonprofit), and institutions that offer promotion, prevention, treatment, and rehabilitation within the community. Other components of this course address the importance of advocating for community empowerment, participation, and change. Students will also begin the process of gaining a sense of self in relationship to community, and develop an understanding of social dynamics as they relate to power structures. (12/06)

HMSV-51 HUMAN BEHAVIOR AND THE HELPING PROCESS

This course examines the history and philosophies of human services; identifies what constitutes genuine and empathic relationships; analyzes the role of conflict in individual and societal systems; demonstrates a broad range of relevant communication skills and strategies, and assists students in designing integrated services using innovative practices in diverse settings. The course includes components on personality development; social and political influences that shape interactive behavior, and guidelines for identifying normal and exceptional behavior, as well as, practical ways of helping people who have problems in living. (12/06)

HMSV-61 SOCIAL WELFARE & SOCIAL WORK

A practical and general study of theoretical concepts and institutional frameworks that guide social welfare policy and practice. This course provides an overview of the social work profession and the social welfare system within which it operates, including federal, state, and county organizations. Students will also review employment opportunities and requirements in social welfare. (12/06)
Humanities
Social Sciences, Humanities and Fine Arts

DEGREE
A.A. - Humanities

Program Description
Humanities is the study of cultural manifestations in all their varieties, such as literature, philosophy, foreign language, and the fine arts. It is the study of intellectual, cultural, and aesthetic development through history with an integration of multi-cultural influences.

Career Opportunities
A humanities major prepares a student for employment in many diverse fields, including education and research, law, international business, government, and the creative arts.

DEGREE
A.A. - Humanities (49300.AA)

For an Associate in Arts Degree in Humanities, students must meet the graduation requirements and complete the 20-unit curriculum listed below. These courses must be in addition to those taken to satisfy the basic graduation requirements.

Program Student Learning Outcomes
A. Distinguish the specific purposes of the various disciplines within the humanities.
B. Examine or analyze sophisticated texts.
C. Compose thoughtful analyzes of texts.
D. Compare and contrast various ideas and points of view.
E. Assess the significance and value of multicultural issues and influences.

HUM-01 Studies in Humanities - Ancient Through Renaissance (CSU breadth area C2) (IGETC area 3B) 3 units: 3 hours lecture.
Prerequisite: ENGL-85. Advisory: ENGL-01A.
The principal aims of this course are to examine human existence and cultural endeavors from earliest ancient civilizations through the Renaissance. Students will examine the continuities of human endeavors through fine arts, literatures, philosophies, religions, and the sciences with an integration of certain non-Western cultures. (5/09)

HUM-01H HONORS STUDIES IN HUMANITIES -- Ancient Through Renaissance (CSU breadth area C2) (IGETC area 3B) 3 units: 3 hours lecture.
Limitation on enrollment: Enrollment in the Honors Program. See the college catalog for a description of enrollment requirements.
The principal aim of this course is to examine human existence and cultural endeavor from the earliest ancient civilizations through the Renaissance. Students will examine developments in the fine arts, literature, philosophy, religion, and the sciences from a variety of cultures, both Western and non-Western. There will be an emphasis on collaborative learning, research, and writing. (11/09)

HUM-02 Studies in Humanities - Renaissance to Present (CSU breadth area C2) (IGETC area 3B) 3 units: 3 hours lecture.
Prerequisite: ENGL-85. Advisory: ENGL-01A.
The principal aims of this course are to examine human existence and cultural endeavors from the Renaissance to the present. Students will examine the continuities of human endeavors through fine arts, literatures, philosophies, religions, and the sciences, with an integration of certain non-Western cultures. (5/09)

HUM-02H HONORS STUDIES IN HUMANITIES -- RENAISSANCE TO PRESENT (CSU breadth area C2) (IGETC area 3B) 3 units: 3 hours lecture.
Limitation on enrollment: Enrollment in the Honors Program. See the college catalog for a description of enrollment requirements.
The principal aim of this course is to examine human existence and cultural endeavors from the Renaissance to the present. Students will examine developments in the fine arts, literature, philosophy, religion, and the sciences from a variety of cultures, both Western and non-Western. There will be an emphasis on collaborative learning, research, and writing. (09/10)
HUM-15 COMPARATIVE CULTURES
(CSU breadth area C2/D3) (IGETC area 3B/4C)
3 units: 3 hours lecture.
Advisory: ENGL-01A.
This course surveys the historical development and social structures of several different cultures in the United States. Cultures discussed will normally include African American, Asian American, Mexican American and Native American. Emphasis will be placed on issues of ethnicity and pluralism. (3/12)

HUM-18 AFRICAN AND AFRICAN AMERICAN LITERATURE (Also: ENGL-18)
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisite: ENGL-01A. Advisory: ENGL-01B.
This is an introductory course in African literature written in English or translated from African languages or French into English. It will present a survey of major works from colonial and post-colonial literature to introduce students to African works of merit, cultural relevance, and universal application. In addition to enabling students to view African works within a global context, its goal will be to show the connection of themes, issues, and styles between African and African-American literature and experience as well. Works studied will include epics and narratives, poetry and song lyrics, short fiction, novels, essays, films, and drama in an effort to assist students in acquiring an appreciation of important literary voices that have heretofore been neglected in literature studies. (10/07)

IGETC
Intersegmental General Education Transfer Breadth

CERTIFICATE
IGETC

A minimum of 34 units from the following:
Students must complete a minimum of 34 units used to satisfy the IGETC Transfer Breadth Requirements. Students must receive full certification of the IGETC pattern which requires a minimum of grade “C” or better in each IGETC course. See the IGETC Transfer Breadth requirements patterns listed in the Merced College catalog or consult with a Merced College counselor.
Industrial Technology
Career and Technical Education

DEGREE
A.A. - Industrial Maintenance Technology

CERTIFICATE
Industrial Maintenance Technology

Gainful Employment Disclosure Metrics
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Program Description
Industrial Technology is a program which blends technical, scientific, and business principles, and which prepares versatile individuals for technological management, production supervision, and related leadership positions.

For locating the various degrees and certificates that fall under Industrial Technology, students should refer to the following degree and certificate titles in this portion of the catalog:

Automotive Technology
Drafting Technology
HVAC Technology
Welding Technology

DEGREE
A.A. - Industrial Maintenance Technology (09550.AA)
An Associate in Arts Degree in Industrial Maintenance Technology is available for students who successfully complete the graduation requirements and complete the following certificate program.

Program Student Learning Outcomes
A. Explain the basic theory of the subject matter or industrial system for the course of instruction based on industry standards.
B. Analyze a scenario based upon an industrial equipment system failure/problem/complaint.
C. Employ a systematic approach to troubleshooting an industrial system malfunction and prepare an effective repair solution.
D. Analyze component failures to determine the root cause of the component failure.
E. Verify if the path of repair was correct by testing and/or completing a work order/report.
F. Demonstrate the correct usage of tools/supplies required to diagnose/repair a malfunction

Units
DRFT-44 Print Reading and Sketching.................................3
ELCT-41 Industrial Motor and Equipment Control.............3
ELCT-47 Electrical Motors, Generators, Transformers, and AC Distribution.................................................3
ELCT-52 Introduction to Electricity and Electronics...........3
INDT-10 Industrial Technical Skills ................................3
INDT-25 Fluid Power....................................................3
INDT-32 Building Construction Concepts........................3
INDT-36 Electrical Wiring .............................................3
INDT-41 Power Transmission..........................................3
INDT-49 Electrical Codes and Ordinances.......................3
MATH-B Applied Mathematics.......................................5
WELD-06 Fundamentals of Oxy-Fuel & Shielded Metal Arc Welding ....................................................3
WELD-07 Fundamentals of T.I.G. and M.I.G. Welding ........3
WELD-40A Welding Design and Construction..................3

44
### Certificate

**Industrial Maintenance Technology (09550.CT)**

A Certificate of Achievement will be awarded upon successful completion of the full certificate listed below. For successful completion, a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

#### Program Student Learning Outcomes

- A. Explain the basic theory of the subject matter or industrial system for the course of instruction based on industry standards.
- B. Analyze a scenario based upon an industrial equipment system failure/problem/complaint.
- C. Employ a systematic approach to troubleshooting an industrial system malfunction and prepare an effective repair solution.
- D. Analyze component failures to determine the root cause of the component failure.
- E. Verify if the path of repair was correct by testing and/or completing a work order/report.
- F. Demonstrate the correct usage of tools/supplies required to diagnose/repair a malfunction

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<td>Print Reading and Sketching</td>
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#### Recommended Sequence: A.A. - Industrial Maintenance Technology (09550.AA); Industrial Maintenance Technology (09550.CT)

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<tr>
<td></td>
<td>MATH-B</td>
<td>Applied Mathematics</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>WELD-06</td>
<td>Fundamentals of Oxy-Fuel &amp; Shielded Metal Arc Welding</td>
<td>3</td>
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<table>
<thead>
<tr>
<th>Spring 2</th>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td></td>
<td>DRFT-44</td>
<td>Print Reading and Sketching</td>
<td>3</td>
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<tr>
<td></td>
<td>INDT-10</td>
<td>Industrial Technical Skills</td>
<td>3</td>
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<tr>
<td></td>
<td>INDT-36</td>
<td>Electrical Wiring</td>
<td>3</td>
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<td>MATH-B</td>
<td>Applied Mathematics</td>
<td>5</td>
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<td></td>
<td>WELD-06</td>
<td>Fundamentals of Oxy-Fuel &amp; Shielded Metal Arc Welding</td>
<td>3</td>
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</tbody>
</table>

### Industrial Technology (INDT)

**INDT-10 INDUSTRIAL TECHNICAL SKILLS (Also: MECH-10)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84, MATH-80.

This course provides an introduction to basic technical skills required throughout the industrial areas. The course includes identification and use of tools and materials, tool sharpening and care, hot and cold metal work, piping, electrical wiring fundamentals, basic woodworking, concrete materials and mixes, and sketching and estimating. (3/06)

**INDT-15 SMALL GAS ENGINES (Also: MECH-15)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-85.

This course is a complete introduction to the operation, construction, maintenance, repair, and adjustment of two-cycle and four-cycle engines. It is designed for persons without prior experience in small engines. Theory and practical work including safety and the care and use of specialized tools used in small engine repair and maintenance will be covered. Examples of types of engines to be used will include lawn mower, power saw, pump, conveyor, self-propelled small carts, and any other small engines. (10/04)

**INDT-20 MICROCOMPUTER OPERATING SYSTEMS FOR INDUSTRIAL TECHNOLOGY**

[CILC areas A,B]

1 unit: 1 hour lecture.

Prerequisite/Advisory: None.

This course will provide students with a working knowledge of file manipulation and DOS operating systems as related to AutoCAD, Windows applications, and technical software. Features such as the basic commands, file management, control of the work flow, print control functions, file configurations, and pathing as related to AutoCAD and associated industrial technology software will be discussed and explored. (2/00)
INDT-25 FLUID POWER  
3 units: 2 hours lecture, 3 hours lab.  
Prerequisite/Advisory: None.  
This course covers the operational theory and practical applications of hydraulic systems, pneumatics, and vacuum components and systems. This includes adjustment, service, and functional operation of pumps, controls, and fluidics. The design and application of fluidic systems as they relate to industrial machinery will be covered together with systematic methods of troubleshooting. (4/99)

INDT-32 BUILDING CONSTRUCTION CONCEPTS  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL 84; MATH-80.  
This course will provide the student with an understanding of construction concepts by building scaled modules of each area of house construction (floor, wall, and roof framing; installation of windows and doors). The student will learn the concepts of stairwell and fireplace framing. (3/06)

INDT-38A-Z ELECTRICAL WIRING: RESIDENTIAL AND INDUSTRIAL  
3 units: 2 hours lecture, 3 hours lab.  
Prerequisite/Advisory: None.  
This course covers basic residential and industrial theory. Topics include electrical theory, wiring in accordance with the latest version of the National Electrical Code, blueprint reading, laying out of electrical circuits according to blueprints, switches, electrical connections, grounding and electrical safety, materials, appliance connections, industrial wiring and components, power poles, and low voltage remote control devices. This course may be repeated when the course number letter changes that reflects National Electrical Code changes. (1/00)

INDT-38 INDUSTRIAL TECHNOLOGY COMPUTER APPLICATIONS AND LITERACY  
[CILC areas A,B,C,D,E,F]  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-85; MATH-80; AOM-50B.  
This course explores computer usage in the workplace with emphasis on industrial technology (IT) situations and applications. Computer applications including word processing, spreadsheets, databases, and presentation managers will be covered. Included will be methods of accessing information through various formats and levels including standard print resources and the Internet. Also included will be an introduction to web page design and other software and hardware appropriate to industrial technology. (2/02)

INDT-40 COMMERCIAL REFRIGERATION SYSTEMS: INSTALLATION, SERVICE, AND MAINTENANCE  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84.  
This course presents commercial refrigeration systems to students. Systems studied will range from fractional to large tonnage refrigeration units. Medium and low temperature units, multiple defrost methods, and energy efficiency will be studied. Diagnostic and repair procedures on commercial systems and related equipment will be covered. (3/06)

INDT-41 POWER TRANSMISSION  
3 units: 2 hours lecture, 3 hours lab.  
Prerequisite/Advisory: None.  
This course covers theory and application of power transmission through chains, belts, gear trains, and augers, including system layout, setup, alignment, adjustment, timing, and maintenance. The student will study peripheral components and systems typical of industrial applications and their related components, such as bearings, seals, shafts, and safety devices. Requirements of preventive maintenance, system troubleshooting, and lubrication schedules are also covered. (2/00)

INDT-49A-Z ELECTRICAL CODES AND ORDINANCES  
3 units: 3 hours lecture.  
Advisory: ENGL-85.  
This is a course in the interpretation and application of the National Electrical Code (NEC), and other national, state, and local electrical codes and ordinances which regulate the installation, alteration, and maintenance of electrical circuits, systems, and equipment. Each letter (i.e., A,B,C, etc.) may be taken only once and represents, when changed, the latest version of the National Electrical Code being taught. (3/05)

INDT-50 HVAC -- HEATING AND CONTROL SYSTEMS  
6 units: 4 hours lecture, 6 hours lab.  
Advisories: ENGL-81, ENGL-84; MATH-80.  
This course will enable students to identify and understand the operation of the various components found in heating and air conditioning units. Students will perform diagnostic and repair procedures on the above units and apply basic electrical concepts as they relate to HVAC industry heating and control technology. (11/02)

INDT-51 HVAC -- VENTILATION AND AIR CONDITIONING SYSTEMS  
6 units: 4 hours lecture, 6 hours lab.  
Advisories: ENGL-81, ENGL-84; INDT-50, INDT-52; MATH-80.  
This course will enable students to identify and understand the operation of various components and systems found in air conditioning refrigeration systems. Students will perform diagnostic and repair procedures on air conditioning refrigeration systems and related equipment. Thermodynamic and psychometric principles as they relate to air conditioning systems will be covered. (11/02)

INDT-52 REFRIGERANT USAGE CERTIFICATION --ENVIRONMENTAL PROTECTION AGENCY (EPA)  
REQUIREMENTS  
1 unit: 1 hour lecture.  
Advisory: ENGL-81.  
This course prepares students for EPA certification in refrigerant handling. The Clean Air Act and Montreal protocol will be discussed. Types I, II, and III certification test requirements will be discussed. EPA testing will be accomplished as a component of the course. A testing fee will be required for those who wish certification. (3/06)

INDT-71A-ZZ INDUSTRIAL TECHNOLOGY SPECIAL TOPICS  
0.5-4 units: lecture/lab hours will vary, depending on topic.  
Prerequisite/Advisory: None.  
This course is the study of basic principles, processes, and theories of the special topic being presented during the semester. (11/09)

INDT-85 BASIC INDUSTRIAL TECHNICAL SKILLS (Also: MECH-85)  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84; MATH 80.  
This course provides a basic introduction to technical skills required throughout the industrial areas. The course includes identification and use of tools and materials, tool sharpening and care, hot and cold metal work, pipe fitting, electric wiring fundamentals, basic woodwork, concrete materials and mixes, and sketching and estimating. (3/06)
International Studies
Social Sciences, Humanities and Fine Arts

DEGREE
A.A. - International Studies

Program Description
In order to meet the ever-changing needs of a diverse community, Merced College has developed a degree that embodies the spirit of global education. The International Studies area of emphasis allows students to take courses that will foster an appreciation of various cultural perspectives. Students will gain an understanding of the benefits of living in a culturally diverse world. The development of cross-cultural tolerance and competencies provides students with skills valued in careers involving intercultural relations such as those in the fields of public service, teaching, health care arts, and business.

The Merced College International Studies Area of Emphasis helps prepare students for upper division International Studies majors at universities in California and other states. It also can help currently employed individuals increase their skills in dealing with international issues they and their employers may encounter.

Students are strongly encouraged to consult with a counselor for specific information regarding their career planning.

DEGREE  
A.A. - International Studies  (22700.AA)

For an Associate in Arts Degree in the area of emphasis in International Studies, students must meet the basic graduation requirements and complete 18 units from the courses listed below.

Select courses from at least two of the following three categories, with at least six units in each of the two categories. Courses listed below may be counted as general education requirements as well as area of emphasis requirements.

Program Student Learning Outcomes
A. Depending on their choice of courses within the three categories of courses, students will develop competencies in a combination of the following areas: multicultural, historical, and philosophical literacy.
B. Students will be able to apply these skills to both public and private sector careers with international components.
C. Students will gain an understanding of living in a culturally diverse and interdependent world.

continued next page...
### Category 3: History and Philosophy

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>HIST-04A</td>
<td>History of Civilization: Part I</td>
<td>3</td>
</tr>
<tr>
<td>HIST-04B</td>
<td>History of Civilization: Part II</td>
<td>3</td>
</tr>
<tr>
<td>HIST-05</td>
<td>History of Europe from 1901 to the Present</td>
<td>3</td>
</tr>
<tr>
<td>HIST-08A</td>
<td>History of the Americas: Part I</td>
<td>3</td>
</tr>
<tr>
<td>HIST-08B</td>
<td>History of the Americas: Part II</td>
<td>3</td>
</tr>
<tr>
<td>HIST-09A</td>
<td>Introduction to East Asian Civilization: China</td>
<td>3</td>
</tr>
<tr>
<td>HIST-09B</td>
<td>Introduction to East Asian Civilization: Japan</td>
<td>3</td>
</tr>
<tr>
<td>HIST-21</td>
<td>The History of Minorities in America – Ethnic Groups, 19th Century to Present</td>
<td>3</td>
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<td>HIST-22</td>
<td>History of Minorities – Black Emphasis</td>
<td>3</td>
</tr>
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<td>HIST-23</td>
<td>U.S. History of Hispanic-Americans in the Southwest</td>
<td>3</td>
</tr>
<tr>
<td>HIST-24</td>
<td>History of the Native American</td>
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<td>PHIL-01</td>
<td>Introduction to Philosophy</td>
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<td>PHIL-01H</td>
<td>Honors Introduction to Philosophy</td>
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<tr>
<td>PHIL-03</td>
<td>Ancient Philosophy</td>
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<tr>
<td>PHIL-04</td>
<td>Modern Philosophy</td>
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<tr>
<td>PHIL-05</td>
<td>Contemporary Moral and Social Issues</td>
<td>3</td>
</tr>
<tr>
<td>PHIL-15</td>
<td>Comparative Religions</td>
<td>3</td>
</tr>
</tbody>
</table>

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### Japanese

**Social Sciences, Humanities and Fine Arts**

**JAPANESE (JPNS)**

**JPNS-01A  ELEMENTARY JAPANESE**

*(CSU breadth area C2)*

2.5 units: 2.5 hours lecture.

Advisory: ENGL-84.

This course will focus on the development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn to express in Japanese the most basic functions of everyday life. *(2/09)*

**JPNS-01B  ELEMENTARY JAPANESE**

*(CSU breadth area C2) (IGETC area 6)*

2.5 units: 2.5 hours lecture.

Prerequisite: JPNS-01A.

This course will continue to focus on the development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in Japanese the most basic functions of everyday life. *(12/11)*

**JPNS-02  ELEMENTARY JAPANESE**

*(CSU breadth area C2) (IGETC area 6)*

5 units: 5 hours lecture.

Prerequisite: JPNS-01B.

JPNS-02 is the continuation of JPNS-01B. This course will focus on the further development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in Japanese basic functions of everyday life. *(2/10)*
Journalism

Program Description
This program gives students the opportunity to prepare for entry-level positions as writers, reporters, photographers, designers, copy editors, and fact checkers for small newspapers, newsletters, or magazines and other entry-level careers that include writing, editing, photography, and/or page layout and design. The Journalism Program also prepares students for transfer to a four-year college or university where they may pursue further studies in Journalism, Mass Communications, and related fields.

While taking courses in Journalism at Merced College, students may gain practical experience by contributing to the production of the Merced College Newspaper, The Devil's Advocate. Production of The Devil's Advocate offers students the opportunity to engage in a variety of journalistic roles, including editing, interviewing, writing, page layout, design and photography, among others.

DEGREE
A.A. - Journalism

For an Associate in Arts Degree in Journalism, students must meet the graduation requirements and complete the 21-unit curriculum listed below.

Program Student Learning Outcomes
A. Identify and evaluate the basic elements of print and digital journalism.
B. Research, compose and edit news and feature stories and press releases.
C. Design, develop and lay out pages of different types of publications using a variety of software programs and applying visual design principles.
D. Identify and explain the processes, elements, history and effects of modern mass media in society.
E. Complete journalistic assignments by deadline.

| JOUR-01 Mass Media and Society | 3 units: 3 hours lecture. Prerequisite: ENGL-85. Advisory: AOM-50B. This is a general, non-technical survey of the media which includes the history, organization, social role, functions, limitations, and responsibilities of newspapers, magazines, radio, television, public relations, advertising, and the Internet. Emphasis is placed on the political, social, and economic impact of the media upon government and public opinion. (2/04) |
| JOUR-08 Introduction to Newswriting and Reporting | 3 units: 3 hours lecture. Prerequisite: ENGL-01A. Advisory: AOM-50B. This is a beginning course providing instruction and practice in language and style of news writing and reporting. Basic skills will be taught in the balanced and objective writing of news events, interviews, speeches, meetings, and features. Instruction will be given in copy reading, and the class will include a brief review of the laws of libel and the responsibilities of the mass media. This course may be repeated once. (02/04) |
| JOUR-32 Newspaper Staff | 3 units: 2 hours lecture, 3 hours lab. Advisories: ENGL-85; JOUR-08; AOM-50B; PHOT-10A. This is a practical course in gathering news, judging news value, writing or photographing news events and features while working as a staff member or editor of the Merced College student newspaper. This course may be repeated two times. (2/04) |

Choose three units from:
- POSC-01 Essentials of the American Political System
- POSC-02 An Introduction to World Political Systems
- ENGL-12 Creative Writing
- ENGL-13/PHIL-13 Critical Reasoning and Writing
- PHOT-10B Intermediate Photography

Units
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JOUR-01 Mass Media and Society 3
JOUR-08 Introduction to Newswriting and Reporting 3
JOUR-32 Newspaper Staff (repeat once) 6
PHOT-10A Basic Photography 3

Choose three units from:
- POSC-01 Essentials of the American Political System 3
- POSC-02 An Introduction to World Political Systems 3

Choose three units from:
- ENGL-12 Creative Writing 3
- ENGL-13/PHIL-13 Critical Reasoning and Writing 3
- PHOT-10B Intermediate Photography 3

21
KINESIOLOGY (KINE)
KINE-01 INTRODUCTION TO KINESIOLOGY
3 units: 3 hours lecture.
Prerequisite: ENGL-85. Advisory: LRNR-30.
This course is an introduction to the interdisciplinary approach to the study of human movement. An overview of the importance of the sub-disciplines in kinesiology will be discussed. Career opportunities in the areas of teaching, coaching, allied health, and fitness professions. (12/11)
Lab Technology
Math, Science and Engineering

DEGREE
A.S. - Lab Technology

Program Description
The Associate in Science Degree in Lab Technology provides a student with sufficient training to enable him/her to perform lab work in food processing quality control labs or related technical lab work.

DEGREE (11/09)
A.S. - Lab Technology (09700.AS)

For an Associate in Science Degree in Lab Technology, students must complete the graduation requirements and the 24-unit curriculum listed below.

Program Student Learning Outcomes
A. Comprehend and apply laboratory math skills.
B. Students will be able to understand and appropriately apply theory of basic laboratory skills.
C. Prepare, comprehend, evaluate, and maintain standard documents associated with the workplace.
D. Students will demonstrate problem-solving skills in the laboratory.
E. Students will demonstrate an appropriate work ethic and demonstrate teamwork skills.

units

Fall
MATH-02 Precalculus .................................................. 4
BIOL-06 Environmental Science .................................. 3

Spring
BIOL-20 Microbiology ................................................. 4
CPSC-01 Introduction to Management Information Systems .... 4

Fall 2
CHEM-04A General Chemistry ........................................ 5
Additional units can be taken as breadth and/or elective courses.

Spring 2
CHEM-04B General Chemistry ........................................ 5
Additional units can be taken as breadth and/or elective courses.

Recommended Sequence: A.S. - Lab Technology (09700.AS)
Additional units can be taken as breadth and/or elective courses.

Fall 1
MATH-02 Precalculus .................................................. 4
BIOL-06 Environmental Science .................................. 3

Spring 1
BIOL-20 Microbiology ................................................. 4
CPSC-01 Introduction to Management Information Systems .... 4

Fall 2
CHEM-04A General Chemistry ........................................ 5
Additional units can be taken as breadth and/or elective courses.

Spring 2
CHEM-04B General Chemistry ........................................ 5
Additional units can be taken as breadth and/or elective courses.

Suggested Area A2/B Breadth courses:
BIOL-01 or BIOL-02, CHEM-04A, and MATH-C.

*Students must contact the Science, Math, and Engineering Division Chairperson for a suitable substitute for this course.
DEGREE
A.A. - Landscape Horticulture
A.S. - Landscape Horticulture

CERTIFICATE
Landscape Horticulture

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The Landscape Horticulture Program at Merced is designed to meet the need for trained personnel in a broad range of occupational opportunities involved with or related to the Landscape Industry.

The Merced College Landscape Unit includes greenhouses, a lath house, a spacious growing grounds and modern head house for potting. Facilities available to the Landscape Unit include a large school farm, laboratories, classrooms, and a beautifully landscaped campus. These facilities provide excellent opportunity for study and practice in the production and use of ornamental plants both for sale and for use in the landscape.

The Landscape Horticulture student receives well-rounded training in his field by being exposed to Tree and Plant Identification, Landscape Design, Construction and Maintenance, and finally, Nursery and Garden Center Practice. All courses deal with the entire range of activities within that particular area such as landscape uses of plants, plant propagation, basic irrigation and sprinkler systems. The legal aspects of the field are covered in the Landscape Construction and Installation course when local codes and state requirements for licensing are taught.

Career Opportunities
Enjoyable and profitable employment is waiting for qualified Merced College graduates who become proficient in propagating, growing, installing, and caring for ornamental plants.

The increase in leisure time with the related increase in employment and high earnings, have created an ever-expanding demand for plant material.

The following list is a sample of the positions available to the graduate:

**Nursery Industry**
- Retail Nursery Sales
- Retail Nursery Owner
- Plant Propagation
- Nursery Production

**Turf Industry**
- Golf Course Personnel
- Parks Groundskeeper

**Government Services**
- Extension Assistant

**Landscape Industry**
- Arbor Personnel
- Landscape Maintenance
- Landscape Estimator
- Landscape Installation
- Landscape Designer

**Related Industry**
- Pest Control
- Sales Representative
- Park Ranger

Dean
James Andersen
Phone
(209) 384-6250
Area Office
AG-Office

Counseling
(209) 384-6314
Cooperative Work Experience
(209) 384-6364

Phone Counseling
James Andersen (209) 384-6314
Phone Cooperative Work Experience
(209) 384-6364
DEGREE (12/06)
A.A. - Landscape Horticulture (01350.AA)

The Associate in Arts Degree is earned upon satisfactory completion of the 19-unit core in addition to the graduation requirements.

Program Student Learning Outcomes
A. Given an area to be landscaped and customer parameters, plan a workable landscape design including the bid and customer presentation.
B. Demonstrate the ability to perform the hands on skills and abilities to build/construct various projects related to the landscape industry. These will include, but not be limited to, carpentry, electrical, plumbing and irrigation, concrete, site preparation, and bid and job estimation.
C. Identify and select the most appropriate plants and trees with the decision based on the environment conditions, plant characteristics and customer preferences.
D. Faced with either a hypothetical or actual problem dealing with plantings or sprinkler/irrigation systems and the appropriate references, determine a solution to the problem.

Core:

<table>
<thead>
<tr>
<th>Units</th>
<th>Core:</th>
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<tbody>
<tr>
<td>LAND-10A</td>
<td>Plant Identification and Usage: Fall</td>
</tr>
<tr>
<td>LAND-11</td>
<td>Elements of Landscape Horticulture</td>
</tr>
<tr>
<td>LAND-12</td>
<td>Landscape Design</td>
</tr>
<tr>
<td>MECH-31</td>
<td>Equipment Safety</td>
</tr>
<tr>
<td>PLSC-10</td>
<td>Elements of Plant Science</td>
</tr>
<tr>
<td>SOIL-10</td>
<td>Soil Science</td>
</tr>
<tr>
<td>19</td>
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</tr>
</tbody>
</table>

DEGREE (12/06)
A.S. - Landscape Horticulture (01350.AS)

The Associate in Science degree is earned upon satisfactory completion of the 19-unit core and electives for a total of 30 units in addition to the graduation requirements.

Program Student Learning Outcomes
A. Given an area to be landscaped and customer parameters, plan a workable landscape design including the bid and customer presentation.
B. Demonstrate the ability to perform the hands on skills and abilities to build/construct various projects related to the landscape industry. These will include, but not be limited to, carpentry, electrical, plumbing and irrigation, concrete, site preparation, and bid and job estimation.
C. Identify and select the most appropriate plants and trees with the decision based on the environment conditions, plant characteristics and customer preferences.
D. Faced with either a hypothetical or actual problem dealing with plantings or sprinkler/irrigation systems and the appropriate references, determine a solution to the problem.

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<td>PLSC-10</td>
<td>Elements of Plant Science</td>
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<tr>
<td>SOIL-10</td>
<td>Soil Science</td>
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<tr>
<td>Plus 11 units from the following electives:</td>
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<tr>
<td>AGBS-18</td>
<td>Agricultural Computer Applications</td>
</tr>
<tr>
<td>DRFT-04A</td>
<td>Fundamentals of Computer-Aided Drafting</td>
</tr>
<tr>
<td>PPPO-13</td>
<td>Fruit Tree Maintenance</td>
</tr>
<tr>
<td>LAND-15</td>
<td>Landscape Maintenance</td>
</tr>
<tr>
<td>LAND-17</td>
<td>Nursery and Garden Center Practice</td>
</tr>
<tr>
<td>MECH-15</td>
<td>Small Engine Repair and Maintenance</td>
</tr>
<tr>
<td>MECH-35</td>
<td>Compact Power Equipment</td>
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<tr>
<td>PLSC-13</td>
<td>Economic Entomology</td>
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<tr>
<td>LAND-16</td>
<td>Plant Propagation</td>
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<tr>
<td>SOIL-11</td>
<td>Fertilizer and Soil Amendments</td>
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<tr>
<td>30</td>
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</table>
**CERTIFICATE**

**Landscape Horticulture (01350.CT)**

A Certificate of Achievement will be awarded upon the satisfactory completion of the 19 unit core and 18 units from the electives below.

**Program Student Learning Outcomes**

A. Given an area to be landscaped and customer parameters, plan a workable landscape design including the bid and customer presentation.

B. Demonstrate the ability to perform the hands on skills and abilities to build/construct various projects related to the landscape industry. These will include, but not be limited to, carpentry, electrical, plumbing and irrigation, concrete, site preparation, and bid and job estimation.

C. Identify and select the most appropriate plants and trees with the decision based on the environment conditions, plant characteristics and customer preferences.

D. Faced with either a hypothetical or actual problem dealing with plants or sprinkler/irrigation systems and the appropriate references, determine a solution to the problem.

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<tr>
<td>LAND-10A</td>
<td>Plant Identification and Usage: Fall</td>
</tr>
<tr>
<td>LAND-10B</td>
<td>Plant Identification and Usage: Spring</td>
</tr>
<tr>
<td>LAND-11</td>
<td>Elements of Landscape Horticulture</td>
</tr>
<tr>
<td>LAND-12</td>
<td>Landscape Design</td>
</tr>
<tr>
<td>LAND-14</td>
<td>Landscape Construction and Installation</td>
</tr>
<tr>
<td>MECH-31</td>
<td>Equipment Safety</td>
</tr>
<tr>
<td>PLSC-10</td>
<td>Elements of Plant Science</td>
</tr>
<tr>
<td>SOIL-10</td>
<td>Soil Science</td>
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</tbody>
</table>

Plus 18 units from the following electives:

- AGBS-18 Agricultural Computer Applications
- DRFT-04A Fundamentals of Computer-Aided Drafting
- FPRO-13 Fruit Tree Maintenance
- LAND-15 Landscape Maintenance
- LAND-17 Nursery and Garden Center Practice
- MECH-15 Small Engine Repair and Maintenance
- MECH-35 Compact Power Equipment
- PLSC-13 Economic Entomology
- LAND-16 Plant Propagation
- SOIL-11 Fertilizer and Soil Amendments

**LANDSCAPE HORTICULTURE (LAND)**

**LAND-10A PLANT IDENTIFICATION AND USAGE: FALL**

3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This course covers the identification, growth habits, culture and ornamental use of landscape and indoor plants adapted to climates of California. Plants emphasized will come from the current California Association of Nursery and Garden Centers (C&G & GC), and California Landscape Contractors Association (CLCA) plant lists. Topics include botanical nomenclature, plant hardiness and growth zones, growth habits, plant structural characteristics, and soil nutritional requirements. Landscape uses are stressed along with cultural practices. Plants covered are those best observed and identified in the fall of the year. (1/06)

**LAND-10B PLANT IDENTIFICATION AND USAGE: SPRING**

3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This course covers the identification, growth habits, culture and ornamental use of landscape and indoor plants adapted to climates of California. Plants emphasized will come from the current California Association of Nursery and Garden Centers (C&G & GC), and California Landscape Contractors Association (CLCA) plant lists. Topics include botanical nomenclature, plant hardiness and growth zones, growth habits, plant structural characteristics, and soil nutritional requirements. Landscape uses are stressed along with cultural practices. Plants covered are those best observed and identified in the spring of the year. (1/06)

**LAND-11 ELEMENTS OF LANDSCAPE HORTICULTURE**

3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
This is a course in the study of landscape horticulture with emphasis on nursery operations, landscaping, turf management, and floral industries. Topics include basic botany, cultural practices, propagation, structures and layout, pest management, planting, container gardening and houseplants, floral design, plant identification, turf grass installation and care, and survey of career opportunities. (12/06)

**LAND-12 LANDSCAPE DESIGN**

3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
This course includes the principles of landscape design and studies in form, space, color, texture, scale, balance, utility, and contrast. Materials used in landscape developments, site analysis, problems of design, correct use of plant material relating to ecology and function of landscape structures in the plan will be encompassed in this course. Basic irrigation design is also a component of the course. (1/06)

**LAND-14 LANDSCAPE CONSTRUCTION AND INSTALLATION**

3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
This course covers the fundamentals of landscape construction including soil preparation, paving and construction materials, hand and power tool use, turf and plant installation, plan reading, estimating and bid preparation. The course also covers local codes and state requirements and prepares students to pass the C-27 Landscaping Contractor’s License Exam. (10/05)

**LAND-15 LANDSCAPE MAINTENANCE**

3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
This course prepares students to enhance the function and aesthetic value of public and private landscapes by applying appropriate maintenance techniques. Topics include planting, pruning, watering, soil fertility, pest management, weed control, and landscape maintenance business practices. (10/05)

**LAND-16 PLANT PROPAGATION**

3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
This course teaches the principles of sexual and asexual propagation, seeding, cuttings, grafting, budding, and layering. The student will also be exposed to dedicated plant structures relating to propagation, specialized propagation media and rooting aids. (1/08)

**LAND-17 NURSERY AND GARDEN CENTER PRACTICE**

3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MATH-80.
This course is a study of commercial retail nursery and garden center operations dealing with wholesale and retail nursery practices, including plant care, merchandising, and management practices. (1/06)

**LAND-50 RESIDENTIAL GARDENING**

3 units: 2 hours lecture.
Advisory: ENGL-81.
This course teaches basic needs in residential gardening. Included in this course are plant identification, basic landscape design, sprinkler installation and care, fumigation and lawn installation, pruning, pest and disease recognition and control, soils, fertilization, and weed control. Also included will be foliage plant care for interiors. (1/06)
Learning Resources
English, Basic Skills and Child Development

LEARNING RESOURCES (LRNR)
LRNR-30 INFORMATION COMPETENCY IN THE ELECTRONIC AGE
[CILC areas A,B,C,D,E,F,G]
3 units: 3 hours lecture.
Prerequisite: ENGL-85. Advisories: AOM-50B, keyboard at a
minimum rate of 25 wpm at 95% accuracy.
This course is designed to introduce students to library research and
resources including information retrieval tools. Course work will include
library literacy, research methods, and information technology literacy,
including database applications, as well as consideration of ethical and
legal implications of computer applications and information use. The student
will learn techniques for successful research including documentation and
citation of resources, evaluation of information resources, and bibliography
production. This course fulfills the Computer and Information Literacy
requirements of Merced College. (11/09)
DEGREE
A.A. - Liberal Studies (Teaching Preparation)

Program Description
Liberal Studies is committed to preparation of pre-service elementary teachers who are competent in subject matter areas, capable of integrating knowledge across discipline boundaries, culturally sensitive to diverse learners, effective communicators, sound critical thinkers, and skilled in educational technology.

DEGREE
A.A. - Liberal Studies (Teaching Preparation) (49501.AA)

For an Associate in Arts Degree in Liberal Studies, students must meet the graduation requirements and complete the 34-credit-unit curriculum listed below. The courses listed below must be in addition to the basic graduation requirements.

Program Student Learning Outcomes
A. Make explicit connections between California K-8 Content Standards and subject matter knowledge in Liberal Studies major coursework, including educational technologies relevant to teaching and learning.
B. Demonstrate integrative thinking through the development of projects that connect and integrate discipline knowledge across subject matter areas, including effective oral, written, and interpersonal communications skills in a variety of communication contexts.
C. Demonstrate sensitivity to the diverse cultural, linguistic, and learning abilities of students, and understanding of a variety of teaching strategies to teach all learners effectively.
D. Reflect thoughtfully and critically examine volunteer service activities in K-8 classrooms.

Core:

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<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>COMM-01*</td>
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<td>or</td>
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<tr>
<td>COMM-01H*</td>
<td>3</td>
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<tr>
<td>CPSC-30</td>
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<tr>
<td>ENGL/PHIL-13*</td>
<td>3</td>
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<tr>
<td>ENGL/PHIL-13H*</td>
<td>3</td>
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<tr>
<td>ENGL-31</td>
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<tr>
<td>HIST-17A</td>
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<td>or</td>
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<tr>
<td>HIST-17AH</td>
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LBST-10 INTRODUCTION TO EDUCATION I
3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Students must obtain a fingerprint clearance and negative TB clearance. Advisories: ENGL-01A; CPSC-30; MATH-81.

Students are introduced to the profession of teaching through an understanding of the California State Content Standards, the credential process, the role of the public school teacher, and the personal qualities and characteristics necessary to be a successful teacher. Practical experiences in the classroom will include a minimum of 45 hours tutoring in area schools in K-3 Language Arts. Students will share observations with faculty and peers in weekly meetings to note differences in students and in tutoring/learning styles and to reflect on their personal experiences. This course is intended for students who plan to teach in the K-8 grade levels; the course is required of students in their first year of the CSU, Stanislaus Liberal Studies Program. Students must provide their own transportation to off-campus school sites. Students must dress appropriately as recommended by off-campus school sites. Tutoring placements will not be available for students with felony convictions. Insufficient tutoring exposure will negatively affect grades. All students will be required to attend an orientation session the first week of school. (12/07)
LBST-20 INTRODUCTION TO EDUCATION II

3 units: 2 hours lecture, 3 hours lab.

Limitation on enrollment: Students must obtain a fingerprint clearance and a negative TB clearance. Prerequisite: LBST-10.

Students are provided additional opportunities to explore the teaching profession and how their personalities will fit with their career choice. Students will observe students and teachers in 4-8 math and science classroom environments and share observations with faculty and peers in weekly meetings to note differences in students, in teaching/learning styles, and in their personal reactions to the classroom setting. Placements for LBST 20 will be in a classroom setting different from placements for LBST 10 so students may obtain maximum variety of experience. This course is intended for students who plan to teach in the K-8 levels; the course is required of students in their second year of the CSU Stanislaus Liberal Studies Program. Students must provide own transportation to off-campus school sites. Students must dress appropriately as recommended by off-campus school sites. Observation placements are required for class and will not be available for students with felony convictions. Insufficient observation exposure will negatively affect grades. (12/07)
DEGREE
A.A. - Life Science

DEGREE (4/09)
A.A. - Life Science (04300.AA)

To earn an Associate in Arts Degree in Life Science, the student must complete the basic graduation requirements (a course in chemistry should be taken for science breadth) and the courses listed below.

Program Student Learning Outcomes
A. Organize, analyze and interpret observations and predictions about the natural world using the scientific method.
B. Be able to define and analyze basic principles underlying modern scientific technology, health, and environmental issues and their worldwide impact.
C. Identify and describe cellular and multicellular processes and structures and relate them to their functions.
D. Analyze patterns and mechanisms of genetics from the molecular to the population level.
E. Be able to evaluate scientific technological concerns related to biology and make educated choices.

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<tr>
<th>Units</th>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>4</td>
<td>BIOL-01*</td>
<td>General Biology for Non-Majors</td>
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<tr>
<td>4</td>
<td>BIOL-02*</td>
<td>Human Biology</td>
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<tr>
<td>5</td>
<td>BIOL 04B</td>
<td>Diversity of Life: Morphology and Physiology</td>
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<tr>
<td>5</td>
<td>BIOL 04BH</td>
<td>Honors Diversity of Life: Morphology and Physiology</td>
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Plus nine additional units from the following:

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<tr>
<th>Units</th>
<th>Course</th>
<th>Description</th>
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<tbody>
<tr>
<td>4</td>
<td>BIOL 04A *</td>
<td>Fundamentals of Biology: The Cell and Evolution</td>
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<tr>
<td>4</td>
<td>BIOL 04AH</td>
<td>Honors Fundamentals of Biology - The Cell and Evolution</td>
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<tr>
<td>5</td>
<td>BIOL 04B</td>
<td>Diversity of Life: Morphology and Physiology</td>
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<td>3</td>
<td>BIOL 06</td>
<td>Environmental Science</td>
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<td>3</td>
<td>BIOL 08</td>
<td>Conservation of Natural Resources</td>
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<td>4</td>
<td>BIOL 16</td>
<td>General Human Anatomy</td>
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<tr>
<td>4</td>
<td>BIOL 18</td>
<td>Principles of Physiology</td>
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<tr>
<td>4</td>
<td>BIOL 20</td>
<td>Microbiology</td>
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<tr>
<td>4</td>
<td>BIOL 31</td>
<td>Biotechnology I: Basic Lab Techniques &amp; Theory</td>
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<tr>
<td>4</td>
<td>CHEM 02B</td>
<td>Introductory Chemistry: Introduction to Organic &amp; Biochemistry</td>
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<td>4</td>
<td>CHEM 04A</td>
<td>General Chemistry</td>
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<tr>
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<td>3</td>
<td>MATH 10</td>
<td>Elementary Statistics</td>
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<tr>
<td>3</td>
<td>MATH 12</td>
<td>Fortran Programming</td>
</tr>
<tr>
<td>3</td>
<td>MATH 14</td>
<td>C++ Programming</td>
</tr>
</tbody>
</table>

*Note: A student may not take BIOL-01 or BIOL-02 for credit after having taken BIOL-04A or BIOL-04AH.
Management
Allied Health, Business and Public Safety

DEGREES
A.A. - Management/Supervisory Training
A.A. - Small Business Entrepreneurship (see Entrepreneurship)

CERTIFICATES
Customer Service Academy
Management/Supervisory Training
Small Business Entrepreneurship (see Entrepreneurship)

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:

https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
The mission of the Merced College Management Program is to equip students with the skills necessary to advance in a management career. The Management Program prepares students for both the challenges and changes faced in the workplace today. Students can earn an A.A. Degree or Certificate of Completion or simply take classes for professional development growth.

The Associate in Arts Degree in Management/Supervisory Training is in preparation for entry level jobs in management/supervision as well as for advanced preparation for those employed in supervisory positions.

The Customer Service Academy conducts practical, hands-on workshops to enhance a business’ ability to gain and retain both customers and quality employees. This program delivers high quality, energetic, cutting edge training to equip your employees with the skills they need to effectively work together and serve both internal and external customers.

The Customer Service Academy is offered on campus and is also delivered locally through several chambers of commerce. The program can also be delivered on-site in your workplace. For more information about the Customer Service Academy visit us on-line at www.customerserviceacademy.org.

Career Opportunities:
- Management
- Supervision
- Sales
- Executive Assistant
- Administration
- Small Business Owner/Entrepreneur

DEGREE (2/10)
A.A. - Small Business Entrepreneurship
(05700.AA)
See Entrepreneurship.

DEGREE (2/09)
A.A. - Management/Supervisory Training
(05450.AA)

The Associate in Arts Degree in Management/Supervisory Training is in preparation for entry levels in management/supervision as well as for advanced preparation for those employed in supervisory positions. Students must meet the graduation requirements and complete the major requirements with the following courses.

Program Student Learning Outcomes
A. Student will be able to explain the fundamental theories of management and leadership in the workplace.
B. Student will be able to identify and describe various management styles and how to be an effective team leader.
C. Student will develop an awareness of skills needed to be successful in Management/Supervision, including communication, decision making, planning, and motivation.

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
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<td>ACTG-51</td>
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<tr>
<td>BUS-18A</td>
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<tr>
<td>ECON-01A</td>
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<tr>
<td>MGMT-31</td>
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<td>MGMT-32</td>
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<td>MGMT-33</td>
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<tr>
<td>MGMT-34</td>
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<tr>
<td>MGMT-50-52</td>
<td>3</td>
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</tbody>
</table>

The suggested electives include:
- BUS-10 Introduction to Business.........................3
- BUS-35 Money Management ......................................3
- BUS-49A-ZZ Special Topics in Business..................3
- COMM-04 Small Group Discussion and Problem Solving....3
- ECON-01B Introduction to Microeconomics ...............3
- MGMT-37 Small Business Entrepreneurship...............3
CERTIFICATE
Customer Service Academy (05200.CO)

For a Customer Service Academy Certificate, students must complete all ten management courses listed below.

Program Student Learning Outcomes
Apply the following skills to their interactions with both internal and external customers: Customer service, communication, attitude, team work, values and ethics, time management, stress management, conflict management, decision making and problem solving and managing organizational change.

MGMT-50B Values and Ethics .............................................. ½
MGMT-50C Time Management .............................................. ½
MGMT-50D Communication in the Workplace ............................. ½
MGMT-50F Team Building .................................................. ½
MGMT-50G Decision Making and Problem Solving ....................... ½
MGMT-50H Customer Service .............................................. ½
MGMT-50I Attitude in the Workplace ....................................... ½
MGMT-50F Conflict Resolution ............................................. ½
MGMT-50G Stress Management .......................................... ½
MGMT-50D Communication in the Workplace ............................. ½

CERTIFICATE
Management/Supervisory Training (05450.CT)

A Certificate of Achievement will be awarded upon the satisfactory completion of 29-30 units of course work in this area of study which includes the core courses indicated for the A.A. Degree in Management/Supervisory Training.

Program Student Learning Outcomes
A. Student will be able to explain the fundamental theories of management and leadership in the workplace.
B. Student will be able to identify and describe various management styles and how to be an effective team leader.
C. Student will develop an awareness of skills needed to be successful in Management/Supervision, including communication, decision making, planning, and motivation.

Units
ACTG-04A Fundamentals of Financial Accounting ........................ 4
or ACTG-51 Applied Accounting ............................................. 4
BUS-18A Business Law ...................................................... 4
CPSC-01 Introduction to Management Information Systems ............... 4
or CPSC-30 Computer Applications ....................................... 3
ECON-01A Introduction to Macroeconomics ............................... 3
MGMT-31 Principles of Management ...................................... 3
MGMT-32 Human Resource Management ................................ 3
MGMT-33 Elements of Effective Leadership ............................... 3
MGMT-34 Employment Law .................................................. 3
MGMT-50A The Challenge of Supervision .................................. 0.5
MGMT-50B Values and Ethics .................................................. 0.5
or MGMT-50C Time Management .............................................. 0.5
MGMT-50D Communication in the Workplace ............................. 0.5
MGMT-50F Team Building .................................................. 0.5
MGMT-50G Decision Making and Problem Solving ....................... 0.5
MGMT-50H Customer Service .............................................. 0.5
MGMT-50I Attitude in the Workplace ....................................... 0.5
MGMT-50F Conflict Resolution ............................................. 0.5
MGMT-50G Stress Management .......................................... 0.5
MGMT-50D Communication in the Workplace ............................. 0.5

29-30
Emphasis will be placed on how to prioritize, identifying time wasters, and goal setting. Pass/No Pass only. (1/08)

MGMT-50D COMMUNICATION IN THE WORKPLACE
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to introduce the student to key elements in communication within business organizations. Topics will include verbal and nonverbal communication, listening skills and specific workplace communication skills. Pass/No Pass only. (1/08)

MGMT-50F TEAM BUILDING
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to provide the student with an understanding of how teams work together, common problems teams encounter, and how to solve them. Students will learn to recognize various personalities and how their strengths and weaknesses impact a team. Students will be introduced to team building in the workplace. Pass/No Pass only. (1/08)

MGMT-50G DECISION MAKING AND PROBLEM SOLVING
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to introduce the student to decision-making and problem-solving techniques. Pass/No Pass only. (1/08)

MGMT-50H CUSTOMER SERVICE
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to provide the student with certain key skills and attitudes in order to effectively meet the needs of customers. The participants will be introduced to the key elements of outstanding customer service. Topics will also include understanding and exceeding customer expectations, and how to deal with unrealistic expectations. The course addresses why customers leave, and the long-term value of customers. Pass/No Pass only. (11/07)

MGMT-50I ATTITUDE IN THE WORKPLACE
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to provide the student with certain key skills in the area of attitude so that they may effectively maintain a positive attitude at the workplace and at home. The student will be introduced to the concepts of how attitudes are communicated, and how to adjust one's attitude. Pass/No Pass only. (1/08)

MGMT-50J THRIVE AND SURVIVE IN THE WORKPLACE
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course focuses on the qualities that employers desire in employees and what it takes to thrive and survive in the workplace. Attitude, communication, and work ethics will be stressed. This course is repeatable two times. Pass/No Pass only. (4/04)

MGMT-50K GENERATIONAL DIVERSITY: MANAGING CROSS GENERATIONAL TEAMS
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is the first time in America's history that we have four generations working side by side in the workplace. This course is designed to equip students with knowledge and skills to work with and lead cross-generational teams. Pass/No Pass only. (2/09)

MGMT-50M CULTURAL DIVERSITY
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to help students understand, respect and value different cultural backgrounds. This course will help students interface more effectively with culturally diverse co-workers and customers. Topics will include our own cultural programming, the four layers of diversity, exploring differences and stereotyping. Pass/No Pass only. (2/11)

MGMT-51B MOTIVATION AND MORALE
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to provide an analysis of human behavior as it is related to the workplace. The student will be provided with various alternatives that can be utilized to motivate employees and improve employee morale. This course is repeatable two times. Pass/No Pass only. (11/03)

MGMT-51C LEADERSHIP
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to acquaint the student with the leadership role of the supervisor and introduce various leadership models to aid the student in developing his/her own leadership style. The attributes of a good leader will be discussed. This course is repeatable two times. Pass/No Pass only. (11/97)

MGMT-51F CONFLICT RESOLUTION
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to introduce participants to the meaning of conflict, the causes of conflict, and strategies for resolving interpersonal conflict as well as dealing with difficult customers. Pass/No Pass only. (1/08)

MGMT-51G STRESS MANAGEMENT
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to acquaint the participant with key elements of stress management. Topics will include the recognition of stress, causes of stress, and the benefits of stress management. Various stress management techniques will be covered. Pass/No Pass only. (1/08)

MGMT-52B WRITING SKILLS FOR MANAGERS
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to provide the student with the skills necessary to effectively write various business documents. Topics will include the guidelines necessary to produce effective written communications, introduction to various communication devices used internally in an organization, preparation of written communications for use outside the organization, and business communication and the law. This course is repeatable two times. Pass/No Pass only. (3/06)

MGMT-52C SUCCESSFUL BUSINESS SPEAKING
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to assist the student in developing the skills necessary to successfully speak in a variety of business situations. Topics will include speaking and listening skills, speaking one-to-one, giving oral presentations, and conducting effective meetings. This course is repeatable two times. Pass/No Pass only. (12/07)

MGMT-52D MANAGING ORGANIZATIONAL CHANGE
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to provide the participant with an understanding of change and the influence it has on an organization and the individuals in that organization. Topics will include understanding organizational change, stages of change, and how to manage organizational change. Pass/No Pass only. (1/08)

MGMT-52E EMPLOYEE RECRUITING, INTERVIEWING AND HIRING
0.5 unit: 0.5 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is designed to provide the student with the skills and knowledge necessary to find the best candidates to fill positions of employment. Topics will include job design and analysis, sources of qualified personnel, recruitment methods, interviewing techniques, and the selection process. This course is repeatable two times. Pass/No Pass only. (4/04)
Mathematics
Math, Science and Engineering

DEGREE
A.S.-T. - Mathematics

Program Description
The Mathematics curriculum at Merced College prepares the AS-T graduate for transfer to four-year institutions. Students are strongly encouraged to consult with a counselor for information regarding educational planning and for specific requirements in the catalog of the college to which he/she plans to transfer.

Web Site
www.mccd.edu/academics/divisions/sme/math.html

Career Opportunities
Career Opportunities for math majors after 4 (or more years) of college.
- Banking And Finance
- Air Traffic Controller
- Quantitative Analyst
- Actuary
- Benefits Administrator
- Commodities Trader
- Claims Adjuster
- Climate Analyst
- Technical Writer
- Computer Programmer
- Cryptoanalyst
- Director Of Medical Information Systems
- Epidemiologist
- Stockbroker
- Foreign Exchange Trader
- Law
- Population Ecologist
- Professor
- Programmer Analyst
- Public Utilities Analyst
- Appraiser
- Research Scientist
- Statistician
- Financial Aid Director
- Teacher
- Biostatistical Programming Analyst
- Underwriter
- Urban Designer

DEGREE (12/11)
A.S.-T. - Mathematics (17400.AST)

The Associate in Science in Mathematics for Transfer degree (AS-T) is designed for students planning on transferring to a California State University (CSU). Upon completion of the transfer associate degree, the student is eligible for transfer with junior standing into the CSU system. Students will be given priority consideration when applying to a particular program that is similar to the student's community college area of emphasis.

For an Associate in Science in Mathematics for Transfer (AS-T), students must complete 60 semester units that are eligible for transfer to the CSU with a minimum grade point average of 2.0, that include both of the following:

1. Certification of the Inter-segmental General Education Transfer Curriculum (IGETC) or the California State University General Education-Breadth Requirements.
2. A minimum of 24 units from the list below.

Note: Students are not required to complete any additional local graduation requirements for the AS-T (e.g., PE and Computer and Information Literacy courses).

Career Opportunities in MATH
This degree is designed for students who plan to transfer to a California State University, but also provides students with mathematical knowledge that can be used in variety of careers.

Program Learning Outcomes
A. Utilize Calculus techniques to solve mathematical problems involving rates of change and position.
B. Demonstrate the appropriate use of mathematical techniques to solve mathematical problems.
C. Exhibit an understanding of the role of mathematics in solving problems that occur in the world.
D. Utilize technology to support mathematical problem solving and analysis of functions.

REQUIRED CORE: .................................................................Units
MATH-04A Calculus I .........................................................4
MATH-04B Calculus II .......................................................4
MATH-04C Multivariable Calculus ......................................4
MATH-06 Elementary Differential Equations ....................3
Plus 9 units from the following: ........................................9
MATH-08 Linear Algebra (3)
MATH-14 C++ Programming (3)
or
ENGR-14 C++ Programming (3)
MATH-10 Elementary Statistics (3)
PHYS-04A Elementary Statistics (3)

Total Units toward the Major ............................................24
Additional courses toward CSU Breadth or IGETC certification and transferable electives ..............................................26

DEGREE TOTAL ..........................................................60
Recommended Sequence: A.S.-T. - Mathematics (17400.AS-T)
Additional units can be taken as breadth and/or elective courses.

Fall 1
MATH-04A  Calculus I .............................................................4

Recommended AS-T Degree Electives
MATH-14/ENGR-14  C++ Programming .....................................3
MATH-10  Elementary Statistics .............................................3

Spring 1
MATH-04B  Calculus II ............................................................4

Recommended AS-T Degree Electives
PHYS-04A  Physics .................................................................4
MATH-10  Elementary Statistics .............................................3

Fall 2
MATH-04C  Multivariable Calculus .........................................4

Recommended AS-T Degree Electives
MATH-08  Linear Algebra ........................................................3
MATH-10  Elementary Statistics .............................................3

Spring 2
MATH-06  Elementary Differential Equations ..............................3

Additional units can be taken as breadth and/or elective courses.

MATH-02H HONORS PRECALCULUS
(CSU breadth area B4) 4 units: 4 hours lecture.
Limitation on enrollment: Enrollment in the Honors Program; see the college catalog for a description of requirement enrollment. This course is not open to students having credit in MATH-25 or MATH-26. Prerequisite: MATH-C or MATH-D. Advisory: ENGL-85.
This course covers the real and complex numbers, functions, trigonometric functions, exponential and inverse functions, composition of functions, theory of equations, systems of equations, matrices, and topics in analytic geometry. There will be an emphasis in the use of technology, mathematical writing, and collaborative learning. (12/09)

MATH-04A CALCULUS I
(CSU breadth area B4) (IGETC area 2) 4 units: 4 hours lecture.
Prerequisite: MATH-02 or MATH-02H, or MATH-25 and MATH-26. Advisory: ENGL-85.
This course covers limits, continuity, differentiation and integration of algebraic and trigonometric functions along with their respective applications. (2/10)

MATH-04B CALCULUS II
(CSU breadth area B4) (IGETC area 2) 4 units: 4 hours lecture.
Prerequisite: MATH-04A. Advisory: ENGL-85.
This course is a continuation of MATH-04A, addressing conic sections, transcendental functions, methods of integration, hyperbolic functions, improper integrals, Taylor’s Formula, infinite series, and plane curves and polar coordinates. (2/12)

MATH-04C Multivariable Calculus
(CSU breadth area B4) (IGETC area 2) 4 units: 4 hours lecture.
Prerequisite: MATH-04A. Advisory: ENGL-85.
This course covers vectors and solid analytic geometry, vector-valued functions, partial differentiation, multiple integrals, and topics in vector calculus including Green’s and Stokes’ theorems. (3/10)

MATH-05A APPLIED CALCULUS
(CSU breadth area B4) (IGETC area 2) 3 units: 3 hours lecture.
Prerequisite: MATH-02, or MATH-25 and MATH-26. Advisory: ENGL-85.
This course is designed for the beginning calculus student majoring in the life sciences and/or students majoring in the areas of business, economics, management, and the social sciences. Students majoring in mathematics, engineering, or physical science should enroll in a more rigorous calculus series. This course will cover functions, differentiation, and exponential and natural logarithms, but the emphasis will be on using these topics as tools to solve applied problems in the areas listed above. (1/07)

MATH-05B APPLIED CALCULUS
(CSU breadth area B4) (IGETC area 2) 3 units: 3 hours lecture.
Prerequisite: MATH-05A or MATH-04A. Advisories: ENGL-85.
This course is designed as a continuation of MATH-05A, the study of beginning calculus for the student majoring in the areas of business, economics, management, and the social sciences. The major topic of this course is the study of integration and the applications of integration in the areas described above. Other topics include trigonometry, differential equations, probability, Taylor polynomials and infinite series. This course is not intended for the student majoring in mathematics, engineering, or the physical sciences. (1/07)
MATH-06 ELEMENTARY DIFFERENTIAL EQUATIONS
(CSU breadth area B4) (IGETC area 2)
3 units: 3 hours lecture.
Prerequisite: MATH-04C. Advisories: ENGL-85; MATH-08.
This course is an introduction to ordinary differential equations (ODEs),
including analytical, graphical and numerical methods, as well as a variety
of modeling applications. It introduces both theoretical and practical
considerations, including definitions, existence and uniqueness of
solutions, techniques for solving first-order ODEs and higher-order linear
ODEs, series solutions and singular points for linear differential equations,
Laplace transforms, homogeneous versus nonhomogeneous equations,
linear systems, and numerical methods. (2/08)

MATH-08 LINEAR ALGEBRA
(CSU breadth area B4) (IGETC area 2)
3 units: 3 hours lecture.
Prerequisite: MATH-04B. Advisory: ENGL-85.
This course is an introduction to systems of linear equations, matrices,
determinants, vector spaces, linear transformations, eigenvalues and
eigenvectors with a strong emphasis on applications. (3/12)

MATH-10 ELEMENTARY STATISTICS
(CSU breadth area B4) (IGETC area 2)
3 units: 3 hours lecture.
Prerequisite: MATH-C or MATH-D. Advisory: ENGL-85.
This course covers descriptive statistics, including organization and
presentation of data; elementary probability including permutations,
combinations, binomial and normal distributions; inferential statistics,
including random sampling, hypothesis testing, regression, and correlation
and chi-square distribution. (3/10)

MATH-12 FORTRAN PROGRAMMING (Also: CPSC-12 and ENGR-12)
3 units: 2 hours lecture; 3 hours lab.
Prerequisite: MATH-02, or MATH-25 and MATH-26. Advisory: ENGL-85.
This course teaches students to use the FORTRAN programming
language to solve problems in a wide variety of areas. Program design,
problem-solving, and debugging techniques are emphasized throughout
the course. (1/07)

MATH-14 C++ PROGRAMMING (Also: ENGR-14)
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: MATH-02, or MATH-25 and MATH-26. Advisory: ENGL-85.
This is the entry-level comprehensive concepts course for computer
science majors, and is recommended for science and math majors.
Algorithm design, logic diagrams, problem-solving, coding, and debugging
are emphasized using a structured language such as C++. (1/07)

MATH-15 FINITE MATHEMATICS
(CSU breadth area B4) (IGETC area 2)
3 units: 3 hours lecture.
Prerequisite: MATH-C. Advisory: ENGL-85.
This course covers algebra review, linear models, systems of linear
equations, matrices, linear programming, mathematics of finance, set
theory, and probability. This course includes applications to business,
economics, psychology, and sociology. (3/07)

MATH-20A BASIC STRUCTURE OF MATHEMATICS I
(CSU breadth area B4)
3 units: 3 hours lecture.
Prerequisite: MATH-C or MATH-D. Advisory: ENGL-85.
This course is designed to complete the first course of a two-course
sequence in basic concepts of mathematics required for students preparing
to teach at the elementary school level. It covers elementary set theory,
numeration systems, number theory, the set of integers, the set of rational
numbers, and the set of real numbers. (3/10)

MATH-20B BASIC STRUCTURE OF MATHEMATICS II
(CSU breadth area B4)
3 units: 3 hours lecture.
Prerequisite: MATH-C or MATH-D. Advisories: ENGL-85; MATH-20A.
This course is designed to complete the second course of a two-course
sequence in basic concepts of mathematics required for students preparing
to teach at the elementary school level. This course covers the structure
of plane and solid geometry, measurement, introduction to coordinate
geometry, elementary probability, and statistics. (2/10)

MATH-25 TRIGONOMETRY
(CSU breadth area B4)
3 units: 3 hours lecture.
Limitation on Enrollment: This course is not open to students having
credit in MATH-02. Prerequisite: MATH-C. Advisory: ENGL-85.
This course is a review of right triangle geometry, real numbers, functions
and graphs, trigonometric functions and their graphs, identities, inverse
trigonometry functions, trigonometric equations, right angle trigonometry,
the laws of sines and cosines, and application of polar and rectangular
forms, including vectors and complex numbers. (5/11)

MATH-26 COLLEGE ALGEBRA
(CSU breadth area B4) (IGETC area 2)
3 units: 3 hours lecture.
Prerequisite: MATH-C. Advisory: ENGL-85. (Note: This course is not
open to students having credit in MATH-02.)
This is an advanced course in algebra including the study of real numbers,
polynomials, equations and inequalities, factoring, rational expressions,
exponents, roots, radicals, systems of equations, functions (including
logarithmic and exponential) sequences and series, progressions and the
binomial expansion. (12/06)

MATH-49ABCDEF (1-2) LABORATORY EXPERIENCE IN
MATHEMATICS (TRANSFER-LEVEL)
0.5 - 1 unit: 1.5 - 3 hours lab.
Prerequisite: MATH-C. Advisory: ENGL-85.
This course provides individualized instruction and technology-based
mathematics instruction at the lower-division college level. Technological
applications may include a combination of work on computer algebra
systems, graphing calculators, interactive CD-ROM, and computer tutorials
and/or videotapes on mathematics subjects. Sections of MATH-49 may be
scheduled to augment and enhance specific transfer-level math classes,
or they may be offered independently of other math courses. Topics will
enhance critical thinking, visualization of mathematical concepts, and/or
computational skills. Each letter (i.e., ABCDEF) may be taken only once.
(3/04)

MATH-59ABC (1-2) LABORATORY EXPERIENCE IN MATHEMATICS
(NON-TRANSFER LEVEL)
.5 - 1 unit: 1.5 - 3 hours lab.
Prerequisite: MATH-80. One-way corequisite: MATH-81, MATH-B,
MATH-C, or MATH-D.
This course provides individualized instruction and technology-based
instruction to augment courses in beginning or intermediate algebra.
Technological applications may include a combination of work on computer
algebra systems, interactive CD-ROM, and computer tutorials
and/or videotapes on mathematics subjects. Topics will be tailored to
the supported course and will enhance critical thinking, visualization of
mathematical concepts and/or computational skills. Each letter (i.e., ABC)
may be taken only once. (3/04)
MATH-80  PREALGEBRA
4 units: 4 hours lecture.
Prerequisite: MATH-91. Advisories: ENGL-81, ENGL-81L.
This course covers the real number system and operations of addition, subtraction, multiplication, and division including whole numbers, integers, decimals, fractions and application problems involving percents, ratios, proportions, and square roots. It also covers real world application problems, formulas, measurement concepts, and an introduction to algebra including addition, subtraction, and multiplication of algebraic expressions. (11/08)

MATH-81  BEGINNING ALGEBRA
4 units: 4 hours lecture.
Prerequisite: MATH-80. Advisory: ENGL-85.
This course covers the four basic operations on real numbers and algebraic expressions. It also includes the order of operations, graphing and solving linear equations and inequalities, solving quadratic equations, systems of linear equations, exponents, polynomials, and a brief introduction to functions. (11/11)

MATH-89ABCD  MATH LABORATORY
.5 - 2 units: 1.5 - 6 hours lab.
Advisory: MATH-90. (Note: The letter designation indicates unit value, “A” being for 0.5 unit, “B” for 1 unit, etc., in 0.5 unit increments.)
This course is a laboratory experience designed to help students who have taken a math class that need additional work in mathematics before they progress to the next math class. It is designed to provide individualized assistance and assignments to improve upon their mathematical knowledge. The number of hours and the number of assignments vary, based on the units enrolled in and the needs of the student. Each letter (i.e., A, B, C, or D) may be taken only once. The letter designation indicates unit value, “A” being for 0.5 unit, “B” for 1 unit, etc., (in 0.5 unit increments.) (4/11)

MATH-90  FUNDAMENTALS OF ARITHMETIC
3 units: 3 hours lecture.
Advisory: ENGL-90.
This course is an intensive review of the whole number system, including counting, notation, word names, and the number line. Particular emphasis is placed on the basic computational skills: addition, subtraction, multiplication, and division. Written problems and life skills will be emphasized throughout the course. (10/06)

MATH-91  FUNDAMENTALS OF DECIMALS AND FRACTIONS
3 units: 3 hours lecture.
Prerequisite: MATH-90. Advisories: ENGL-80, ENGL-80L.
This course begins with a short review of the whole number system using basic computational skills. The course covers the meaning of decimals and fractions, and the four basic operations using them: addition, subtraction, multiplication, and division. Special emphasis will be placed on thought problems, including life skills. The course will conclude with an introduction to prime factoring, exponents, basic geometry, and order of operation. (10/06)
Mechanized Agriculture
Career and Technical Education

DEGREES
A.A. - Mechanized Agriculture Technology/Heavy Equipment Mechanics
A.S. - Mechanized Agriculture Technology/Heavy Equipment Mechanics

CERTIFICATES
Compact Power Equipment Mechanized Agriculture Technology/Heavy Equipment Mechanics

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Program Description
Agriculture’s dependence on power equipment has given rise to a tremendous vocational education program at Merced College in the Mechanized Agriculture field. The Mechanized Agriculture program offers courses in a wide variety of subject areas including Power Equipment Mechanics, Agricultural Construction, Diesel Engines, Hydraulics, Small Power Equipment, Machinery Management, and Power Equipment Operation. The Mechanized Agriculture facilities at the College are modern, spacious and equipped with current equipment that is used in the industry.

For instruction in Power Equipment Mechanics, the College shop has diesel engines of all makes and styles, hydraulic components, injection pumps, tractors, and agriculture equipment used for “hands-on” student training. Equipment used in the operation courses consist of both current model tractors as well as vintage designs. In addition, all of the implements necessary to run a complete farming operation are available for instructional use. Trucks and heavy equipment are also available for student instruction.

The Diesel Fuel Systems instruction provides the opportunity for our students to utilize a fully equipped fuel injection room. The College provides students with the tools necessary for all classes.

Career Opportunities
A recent University of California survey on employment opportunities in agriculture categorized the Mechanized Agriculture field as offering “... one of the highest potential labor demands for new employees.” Employment opportunities are excellent and range from farm equipment sales to equipment repair and other careers in related fields such as the trucking industry and compact power equipment.

Diesel equipment is an important part of the farm and industrial sectors of the national, state, and local economy. Persons skilled in the repair, maintenance, and operation of diesel equipment may secure a variety of jobs.

With the evolution of highly sophisticated farm machinery, the technical level of upcoming technicians in the areas of electrical and hydraulic diagnosis and repair is essential. The curriculum within the Mechanized Agriculture Program is designed to meet this need.

The following lists a few employment possibilities:
• Heavy Equipment Technician
• Agriculture Equipment Technician
• Farm & Power Equipment Technician
• Hydraulic Technician
• Heavy Duty Electrical Technician
• Diesel Equipment Technician

DEGREE 10/04
A.A. - Mechanized Agriculture Technology/Heavy Equipment Mechanics (01450.AA)

The Associate in Arts Degree in Mechanized Agriculture Technology/Heavy Equipment Mechanics is available upon completion of the graduation requirements, the 22-unit core, and 15 units from the elective list.

Program Student Learning Outcomes
A. Explain the basic theory of the subject matter or system for the course of instruction based on industry standards.
B. Analyze a scenario based upon an equipment system failure/problem/complaint.
C. Employ a systematic approach to troubleshooting a system malfunction and prepare a solution.
D. Demonstrate the correct tools/supplies required to diagnose/repair a malfunction.
E. Verify if the path of repair was correct by testing and/or completing a work order/report.

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The College provides students with the tools necessary for all classes.

Dean
James Andersen
(209) 384-6250
Cooperative Work Experience
(209) 384-6364
A Certificate of Achievement in Mechanized Agriculture Technology will be awarded upon completion of the 22-unit core and 15 units from the elective list.

Program Student Learning Outcomes
A. Explain the basic theory of the subject matter or system for the course of instruction based on industry standards.
B. Analyze a scenario based upon an equipment system failure/problem/complaint.
C. Employ a systematic approach to troubleshooting a system malfunction and prepare a solution.
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A Certificate of Achievement in Heavy Equipment Mechanics will be awarded upon completion of the 22-unit core and 15 units from the elective list.

Program Student Learning Outcomes
A. Explain the basic theory of the subject matter or system for the course of instruction based on industry standards.

Certificate:  

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A Certificate of Achievement in Compact Power Equipment will be awarded to students who successfully complete the following core courses.

Program Student Learning Outcomes
A. Explain the basic theory of the subject matter or system for the course of instruction based on industry standards.
B. Analyze a scenario based upon an equipment system failure/problem/complaint.
C. Employ a systematic approach to troubleshooting a system malfunction and prepare a solution.
D. Demonstrate the correct tools-supplies required to diagnose/repair a malfunction.
E. Verify if the path of repair was correct by testing and/or completing a work order/report.

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Recommended Sequence: A.A. - Mechanized Agriculture Technology/Heavy Equipment Mechanics (01450.AA); A.S. - Mechanized Agriculture Technology/Heavy Equipment Mechanics (01450.AS); Certificate Mechanized Agriculture Technology/Heavy Equipment Mechanics (01450.CT)

Fall 1
MECH-21 Hydraulics ......................................................... 3
MECH-22A Diesel Engines ..................................................... 4
MECH-26 Power Equipment Electrical Systems ...................... 3
MECH-30 Equipment Mechanics Skills .................................. 2
MECH-31 Equipment Safety ................................................ 1

Spring 1
MECH-22B Diesel Engines ..................................................... 4
MECH-23 Diesel Fuel Systems Diagnostics ............................. 2
MECH-24 Power Trains ....................................................... 4
MECH-32 Applied Electrical and Hydraulic Service .................. 3

Fall 2
MECH-12 Agriculture Equipment ......................................... 3
MECH-15 Small Gas Engines ................................................ 3
MECH-33 Power Equipment Air Conditioning .......................... 2

Spring 2
MECH-06 Fundamentals of Oxy-Fuel Welding and Shielded Metal Arc Welding .................................................. 3
MECH-13 Agriculture Equipment ......................................... 3
MECH-35 Compact Power Equipment ................................. 3
MECH-40 Equipment Repair .................................................. 2

MECHANIZED AGRICULTURE & DIESEL EQUIPMENT MECHANICS (MECH)

MECH-06 FUNDAMENTALS OF OXY-FUEL WELDING AND SHIELDED METAL ARC WELDING (Also: WELD-06)  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84; MATH-80.  
This course emphasizes development of minimum skill standards in welding. The Shielded Metal Arc Welding (SMAW), Oxy-Fuel Welding (OFW) and Oxy-Fuel Cutting (OFC) processes are covered as prescribed in the (AWS) American Welding Training Qualification (QC-10) entry-level standards. (2/06)

MECH-07 FUNDAMENTALS OF T.I.G. AND M.I.G. WELDING (Also: WELD-07)  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84; MATH-80.  
This course emphasizes the development of minimum skill standards in welding. The Gas Metal Arc Welding (GMAW)(MIG), Gas Tungsten Arc W (GTAW)/(TIG) and Plasma Arc Cutting (PAC) processes are studied as prescribed in the American Welding Society (AWS) Training Qualification (QC 10) entry-level standards. (2/06)

MECH-10 AGRICULTURAL SKILLS (Also: IND-T10)  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-81, ENGL-84; MATH-80.  
This course provides an introduction to basic technical skills required throughout the industrial areas. The course includes identification and use of tools and materials, tool sharpening and care, hot and cold metal work, pipelighting, electrical wiring fundamentals, basic woodworking, concrete materials and mixes, and sketching and estimating. (3/06)

MECH-12 AGRICULTURE EQUIPMENT  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-85.  
This course is a study of the use, maintenance, adjustment, calibration, and repair of the equipment commonly used in California agriculture, with emphasis on primary and secondary tillage, planting, chemical application, and harvesting equipment. The selection and operation of both machinery and tractors will be practiced. Safety will be stressed throughout. (10/04)

MECH-13 AGRICULTURE EQUIPMENT  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-85.  
This course is a study of the use, maintenance, adjustment, calibration, and repair of the equipment commonly used in California agriculture during the spring tillage season, with emphasis on primary and secondary tillage, planting, chemical application, and harvesting equipment. The selection and operation of both machinery and tractors will be practiced. Safety will be stressed throughout. (3/06)

MECH-15 SMALL GAS ENGINES (Also: INDT-15)  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-85.  
This course is a complete introduction to the operation, construction, maintenance, repair, and adjustment of two-cycle and four-cycle engines. It is designed for persons without prior experience in small engines. Theory and practical work including safety and the care and use of specialized tools used in small engine repair and maintenance will be covered. Examples of types of engines to be used will include lawn mower, power saw, pump, conveyor, self-propelled small carts, and any other small engines. (10/04)

MECH-19A WELDING DESIGN AND CONSTRUCTION (Also: WELD-40A)  
3 units: 2 hours lecture, 3 hours lab.  
Prerequisite: WELD-07 or MECH-07.  Advisories: ENGL-81, ENGL-84; MATH-80.  
This course covers basic metal fabrication skills as well as the design and construction of special industrial and agricultural equipment. (2/06)

MECH-19B WELDING DESIGN AND CONSTRUCTION (Also: WELD-40B)  
3 units: 2 hours lecture, 3 hours lab.  
Prerequisite: WELD-40A/MECH-19A.  Advisories: ENGL-81, ENGL-84; MATH-80.  
This course is a continuation of WELD-40A/MECH-19A. It covers basic and advanced metal fabrication skills as well as the design and construction of special agricultural and industrial equipment. (2/06)

MECH-21 HYDRAULICS  
3 units: 2 hours lecture, 3 hours lab.  
Advisories: ENGL-85.  
This is an introduction to the principles of hydraulics applied to farm and light industrial equipment. The course includes a study of the technical language of fluid power, including graphical symbols, industrial standards, components, and maintenance of hydraulic units. (10/04)

MECH-22A DIESEL ENGINES  
4 units: 2 hours lecture, 6 hours lab.  
Advisories: ENGL-85.  
This course explores the operation and repair of modern diesel engines. Principles and theories are studied by running, testing, diagnosing, disassembling and reassembling components, systems, and engines. (10/04)

MECH-22B DIESEL ENGINES  
4 units: 2 hours lecture, 6 hours lab.  
Prerequisite: MECH-22A.  
This course includes principles of design and construction of heavy duty engines used throughout the power equipment and trucking industry. Emphasis is placed on engine chamber design and injection systems. Principles and theories are studied by running, testing, diagnosing, disassembling, and reassembling components, systems, and engines. Safety is emphasized throughout. (11/06)
MECH-23 DIESEL FUEL SYSTEM DIAGNOSTICS
2 units: 1 hour lecture, 3 hours lab.
Advisories: ENGL-85.
This course includes the study of common types of diesel fuel injection systems. Design and theory of operation of distributor type, multi-plunger inline type, and common rail diesel fuel injection systems will be covered. Testing and diagnostic procedures for various fuel systems is an important part of the course. Service and adjustments of injectors, nozzles, and governors will also be covered. (10/04)

MECH-24 POWER TRAINS
4 units: 2 hours lecture, 6 hours lab.
Advisories: ENGL-85.
This course is a study of the function and repair of a power train from the clutch through the final drive. Topics will include the theory of operation, maintenance, diagnosis, and repair of clutches and torque converters, mechanical and hydraulic transmissions, differential, and final drives. Safety will be stressed throughout. (3/06)

MECH-26 POWER EQUIPMENT ELECTRICAL SYSTEMS
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85.
This course is a study of the fundamentals of electricity with applications to current power equipment electrical systems. Theory and service procedures will include the following systems: starting, charging, lighting, and accessories. (10/04)

MECH-30 EQUIPMENT MECHANICS SKILLS
2 units: 1 hour lecture, 3 hours lab.
Advisories: ENGL-85.
This course is an introduction to skills and safety required within the Diesel Mechanics and Mechanized Agriculture areas. The course will include identification and use of hand tools and power equipment used within the equipment mechanic area. Emphasis will be placed on precision measuring and use of the following equipment: hydraulic press, pullers, cleaners, hoists, jacks, securing, dynamometers, valve grinders, boring machines, sharpening tools, reamers, hones, glass bead machine, boil out tank, forklifts, and other specialty tools. An in-depth study will also occur on fasteners and plumbing used within the equipment mechanic area. (10/04)

MECH-31 EQUIPMENT SAFETY
1 unit: 1 hour lecture.
Advisories: ENGL-81, ENGL-84.
This course is a study of safety on and about farm equipment and machines. The safe operation and daily maintenance of machines commonly used in the daily operation of farms will be covered along with hitching, driving, and operational skills of selected machines. Safety rules and laws that apply to agriculture equipment will be stressed. (11/06)

MECH-32 APPLIED ELECTRICAL AND HYDRAULIC SERVICE
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MECH-21, MECH-26.
This course is designed to give the student knowledge and competencies in modern cab and chassis electrical, electronic, electron hydraulic, and hydraulic systems. Testing, diagnosis, repair, and replacement of computer-controlled systems, monitors, sensors, lighting systems, wiring harness, electro-hydraulic systems, and hydraulic systems will be emphasized throughout the course. (3/06)

MECH-33 POWER EQUIPMENT AIR CONDITIONING
2 units: 1 hours lecture, 3 hours lab.
Advisories: ENGL-85.
This is a study of power equipment air conditioning fundamentals designed to give the student knowledge and competencies in modern power equipment HVAC systems. Current EPA regulations that govern retrofit as well as the use of refrigerant installation, diagnostic, and recycling equipment are also covered. Environmental impacts by various protection procedures are emphasized. (3/06)

MECH-34 ENGINEERING DRAWING
.5 - 4 units: 0-4 hours lecture, 0-12 hours lab.
Advisories: ENGL-B; MATH-80; WELD-06/MECH-06 and WELD-07/MECH-07.
This course is designed to emphasize advanced skills and techniques of Shielded Metal Arc Welding, Gas Metal Arc Welding, Gas Tungsten Arc Welding, Air Carbon Arc Cutting, and Oxyacetylene Flame Cutting as related to pipe and structural members. Included will be welding assembly print interpretation, weld symbol interpretation, and weld joint preparation. Students will be prepared to take an AWS Welder Certification Test during this course. (2/06)

MECH-35 COMPACT POWER EQUIPMENT
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-85; MECH-15.
This is a study in basic principles of modern small equipment and engines and explores design, operation, and proper maintenance of equipment and current compact engines approved by the California Air Resources Board. Topics include application of compact engine systems to various machines, power transmission systems, attachments, related engine systems to various machines, power transmission systems, attachments, related engine systems, equipment operation, problem solving, and component failures. (9/06)

MECH-40 EQUIPMENT REPAIR
2 units: 1 hour lecture, 3 hours lab.
Advisories: ENGL-81, ENGL-84.
This class is an introduction to skills of maintenance and repair of equipment. Renovation of equipment including tractor, machinery, and truck painting, retooling, and structural repairs will be covered. Replacement of worn cutting tools, hardfacing, sandblasting, metal preparation, and painting will be performed on a variety of equipment. Safety will be stressed throughout. (11/06)

MECH-45 ADVANCED ARC WELDING PROCEDURES (Also: WELD-45)
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-B; MATH-80; WELD-06/MECH-06 and WELD-07/MECH-07.
This course is designed to emphasize advanced skills and techniques of Shielded Metal Arc Welding, Gas Metal Arc Welding, Gas Tungsten Arc Welding, Air Carbon Arc Cutting, and Oxyacetylene Flame Cutting as related to pipe and structural members. Included will be welding assembly print interpretation, weld symbol interpretation, and weld joint preparation. Students will be prepared to take an AWS Welder Certification Test during this course. (2/06)

MECH-48 MECHANIZED AGRICULTURE: PROBLEMS
2 units: 6 hours lab.
Prerequisites: MECH-22A, MECH-24, MECH-30.
This course is designed to provide supervised study and practices involving special problems in Mechanized Agriculture in addition to courses already completed by the student and includes special project work for additional knowledge and enrichment. Emphasis will be placed upon the needs and interest of the student. (11/06)

MECH-51 TRUCK BRAKE AND CHASSIS
4 units: 2 hours lecture, 6 hours lab.
Advisories: ENGL-81, ENGL-84.
This course is a study of truck and bus mechanics. It includes a study of the running gear, tires, wheels, brakes, electrical systems wiring, services, maintenance, and safety inspection. Troubleshooting and servicing are major portions of this course. (11/06)

MECH-70AA-ZZ SPECIAL TOPICS IN MECHANIZED AGRICULTURE
.5 - 4 units: 0-4 hours lecture, 0-12 hours lab.
Advisories: ENGL-81, ENGL-84.
This course is the study of basic principles, processes, and theories of the special topic being presented during the semester. (11/06)

MECH-85 BASIC AGRICULTURAL SKILLS (Also: INDT-85)
3 units: 2 hours lecture, 3 hours lab.
Advisories: ENGL-81, ENGL-84; MATH-80.
This course provides a basic introduction to technical skills required throughout the industrial areas. The course includes identification and use of tools and materials, tool sharpening and care, hot and cold metal work, pipe fitting, electric wiring fundamentals, basic woodwork, concrete materials and mixes, and sketching and estimating. (3/06)
### Merchandising Management

#### Allied Health, Business and Public Safety

**DEGREE**

A.A. - Merchandising Management

**CERTIFICATE**

Merchandising Management

#### Gainful Employment Disclosure Metrics

Gainful Employment Disclosure provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:

https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

#### Program Description

The Associate in Arts Degree in Merchandising/Marketing Management is in preparation for employment in the merchandising and marketing areas. Students must meet the graduation requirements and complete the major requirements.

#### Career Opportunities

The Merchandising Management program offers students courses and experiences to enter Retail Management programs and tools to prepare for, open, and operate a retail establishment.

#### Program Student Learning Outcomes

A. Students will examine the development of a marketing strategy, including market segmentation and marketing mix.

B. Students will maximize merchandise sales using product design, selection, packaging, pricing, and displays that stimulates consumers to spend more.

C. Students will research the disciplines in pricing and discounting, physical presentation of products and displays, and the decisions about which products should be presented to which customers at what time.

#### Courses Required

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>ACTG-04A</td>
<td>Fundamentals of Financial Accounting</td>
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<td>or</td>
<td>ACTG-51</td>
<td>4</td>
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<tr>
<td>BUS-10</td>
<td>Introduction to Business</td>
<td>3</td>
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<tr>
<td>BUS-18A</td>
<td>Business Law</td>
<td>4</td>
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<tr>
<td>CPSC-01</td>
<td>Introduction to Management Information Systems</td>
<td>4</td>
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<tr>
<td>or</td>
<td>CPSC-30</td>
<td>3</td>
</tr>
<tr>
<td>ECON-01A</td>
<td>Introduction to Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>MDSE-31</td>
<td>Retail Management</td>
<td>3</td>
</tr>
<tr>
<td>MDSE-33</td>
<td>Advertising</td>
<td>3</td>
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<tr>
<td>MGMT-31</td>
<td>Principles of Management</td>
<td>3</td>
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<tr>
<td>MGMT-50</td>
<td>Management Series</td>
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<td>MKTG-30</td>
<td>Marketing</td>
<td>3</td>
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**Suggested electives include:**

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<tbody>
<tr>
<td>BUS-35</td>
<td>Money Management</td>
<td>3</td>
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<tr>
<td>BUS-49A-ZZ</td>
<td>Special Topics in Business</td>
<td>½ -3</td>
</tr>
<tr>
<td>COMM-04</td>
<td>Small Group Discussion and Problem Solving</td>
<td>3</td>
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<tr>
<td>MDSE-32</td>
<td>Salesmanship</td>
<td>3</td>
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<tr>
<td>MGMT-37</td>
<td>Small Business Entrepreneurship</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Dean

Bobby Anderson

#### Phone

(209) 384-6120

#### Area Office

VOC-18

#### Counseling

(209) 384-6314

#### Cooperative Work Experience

(209) 384-6364

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**2012-2013 CATALOG**
CERTIFICATE
Merchandising Management (05350.CT)

A Certificate of Achievement will be awarded upon the satisfactory completion of 30 units of course work in this area of study which includes the core courses indicated for the Associate in Arts Degree in Merchandising Management.

Program Student Learning Outcomes
A. Examine the development of a marketing strategy, including market segmentation and marketing mix.
B. Maximize merchandise sales using product design, selection, packaging, pricing, and displays that stimulates consumers to spend more.
C. Research the disciplines in pricing and discounting, physical presentation of products and displays, and the decisions about which products should be presented to which customers at what time.

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Fall
- ACTG-04A Fundamentals of Financial Accounting .......... 4
- or ACTG-51 Applied Accounting ......................... 4
- BUS-10 Introduction to Business ....................... 3
- BUS-18A Business Law .................................. 4
- CPSC-01 Introduction to Management Information Systems .... 4
- or CPSC-30 Computer Applications ....................... 3
- ECON-01A Introduction to Macroeconomics ............. 3
- MDSE-31 Retail Management ................................ 3
- MDSE-33 Advertising .................................... 3
- MGMT-31 Principles of Management ...................... 3
- MGMT-50 Management Series ................................ 1
- MKTG-30 Marketing ....................................... 3

Spring
- BUS-18A Business Law .................................. 4
- MKTG-30 Marketing ....................................... 3
- Advertising ............................................ 3

RECOMMENDED SEQUENCE: A.A. - Merchandising Management (05350.AA)

MERCHANDISING MANAGEMENT (MDSE)

MDSE-31 RETAIL MANAGEMENT (Also: MKTG-31)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is a study of principles and practices of retail merchandising. It is designed to help develop skills in organizing, operating, and managing in the retail merchandising industry. It will also provide students with knowledge necessary to enter the field of merchandising and to provide a basis for advancement for those currently employed in the field. (4/04)

MDSE-32 SALESMANSHIP (Also: MKTG-32)
3 units: 3 hours lecture.
Prerequisites/Advisories: None.
This course is designed to provide the student with a theoretical and practical background in salesmanship. Included in this course are the study of the psychology of selling, selling principles and techniques, advertising and sales promotion, and development of the individual for entry into the field of salesmanship. (3/00)

MDSE-33 ADVERTISING (Also: MKTG-33)
3 units: 3 hours lecture.
Advisory: CPSC-30; ENGL-85; VIRT-52.
This is an introductory course in advertising principles and techniques. Areas of study will include advertising agencies, preparation of advertisements, including copyrighting, illustration and layouts, media selection, budgeting for advertising, psychology and persuasion of advertisements, and the use of advertising as a tool in sales promotion. (12/11)
Program Student Learning Outcomes
A. Students will examine the development of a marketing strategy, including market segmentation and marketing mix.
B. Students will learn how to maximize merchandise sales using product design, selection, packaging, pricing, and displays that stimulates consumers to spend more.
C. Students will research the disciplines in pricing and discounting, physical presentation of products and displays, and the decisions about which products should be presented to which customers at what time.

MARKETING (MKTG)

MKTG-30 MARKETING
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course provides a broad understanding of the promoting, pricing, and distribution of products and services. Promotional mixes are studied including sales promotion, advertising, packaging, personal selling, public relations, and publicity. A study is made of understanding customer needs and behaviors; developing a product and/or service mix to satisfy customer needs, and profitability. Legal, political, cultural, social, economic, competitive, and ethical aspects of marketing are discussed. (12/06)

MKTG-31 RETAIL MANAGEMENT (Also: MDSE-31)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is a study of the principles and practices of retail merchandising. It is designed to help develop skills in organizing, operating, and managing in the retail merchandising industry. It will also provide students with the knowledge necessary to enter the field of merchandising and to provide a basis for advancement for those currently employed in the field. (4/04)

MKTG-32 SALESMANSHIP (Also: MDSE-32)
3 units: 3 hours lecture.
Prerequisites/Advisories: None.
This course is designed to provide the student with a theoretical and practical background in salesmanship. Included in this course is the study of the psychology of selling, selling principles and techniques, advertising and sales promotion, and development of the individual for entry into the field of salesmanship. (3/00)

MKTG-33 ADVERTISING (Also: MDSE-33)
3 units: 3 hours lecture.
Advisory: CPSC-30; ENGL-85; VIRT-52.
This is an introductory course in advertising principles and techniques. Areas of study will include advertising agencies, preparation of advertisements, including copyrighting, illustration and layouts, media selection, budgeting for advertising, psychology and persuasion of advertisements, and the use of advertising as a tool in sales promotion. (12/11)
### Music
Social Sciences, Humanities and Fine Arts

#### DEGREE
A.A. - Music: Music History
A.A. - Music: Guitar
A.A. - Music: Instrumental
A.A. - Music: Piano
A.A. - Music: Vocal

#### DEGREE (12/10)
A.A. - Music: Music History (10430.AA)

For an Associate in Arts Degree in Music: Music History, students must meet the basic graduation requirements in addition to the 30 unit curriculum below.

Program Student Learning Outcomes
A. Analyze, identify, and apply standard theoretical concepts in the understanding of existing compositions, the organization of musical sounds, and in the creation of original compositions.
B. Demonstrate pitch recognition and rhythmical concepts using either vocal or instrumental sound production.
C. Demonstrate knowledge of the historical development of western music, prominent composers and performers, and cultural issues as they relate to the traditional and/or modern artistic periods.
D. Analyze the major movements within western music from its ancient beginnings to its current state, research prominent composers, and translate musical concepts into written and verbal formats.

<table>
<thead>
<tr>
<th>Core:</th>
<th>Units</th>
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<tbody>
<tr>
<td>MUS-04A</td>
<td>Music Theory I (Diatonic Harmony) .................</td>
</tr>
<tr>
<td>MUS-04B</td>
<td>Music Theory II (Diatonic Harmony II) .............</td>
</tr>
<tr>
<td>MUS-04C</td>
<td>Music Theory III .......................................</td>
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<td>MUS-04D</td>
<td>Music Theory IV .........................................</td>
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<tr>
<td>MUS-24A</td>
<td>Applied Music I ..........................................</td>
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<tr>
<td>MUS-24B</td>
<td>Applied Music II .........................................</td>
</tr>
<tr>
<td>MUS-27A</td>
<td>Piano I ...................................................</td>
</tr>
</tbody>
</table>

Music History Electives: Select 9 units from the following courses:
MUS-11 History of Classical Music ................................. 3
MUS-12 History of Classical Music (Early Music Through Baroque Era) ......................................................... 3
MUS-13 History and Appreciation of Jazz ........................... 3
MUS-14 History of American Popular Music ........................ 3

Plus 5 units from the following electives:
MUS-27B Piano II ................................................... 2
MUS-27C Piano III .................................................. 2
MUS-27D Piano IV .................................................... 2
MUS-36A Guitar I ..................................................... 3
MUS-36B Guitar II ..................................................... 3
MUS-39A-ZZ Special Problems in Music ......................... 3-6

GE local units: 30

Total Units 60

#### DEGREE (12/10)
A.A. - Music: Guitar (10410.AA)

For an Associate in Arts Degree in Music: Guitar, students must meet the basic graduation requirements in addition to the 30 unit curriculum below.

Program Student Learning Outcomes
A. Identify the general character and specific demands of the standard guitar repertoire; including strengthening exercises, appropriate tone, intonation, and dynamics for performance as it relates to lower division guitar coursework.
B. Analyze, identify, and apply standard theoretical concepts in the understanding of existing compositions, the organization of musical sounds, and in the creation of original compositions.
C. Demonstrate pitch recognition using either vocal or instrumental sound production, and demonstrate rhythmical concepts and procedures.
D. Demonstrate knowledge of the historical development of western music, prominent composers and performers, and cultural issues as they relate to the traditional and/or modern artistic periods.

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<td>MUS-04A</td>
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<td>MUS-04B</td>
<td>Music Theory II (Diatonic Harmony II) .............</td>
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<td>MUS-04C</td>
<td>Music Theory III .......................................</td>
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<tr>
<td>MUS-04D</td>
<td>Music Theory IV .........................................</td>
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<tr>
<td>MUS-24A</td>
<td>Applied Music I ..........................................</td>
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<tr>
<td>MUS-24B</td>
<td>Applied Music II .........................................</td>
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<tr>
<td>MUS-36A</td>
<td>Guitar I ...................................................</td>
</tr>
<tr>
<td>MUS-36B</td>
<td>Guitar II ....................................................</td>
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</tbody>
</table>

Music History Electives: Select 6 units from the following courses:
MUS-11 History of Classical Music (Early Music Through Baroque Era) ......................................................... 3
MUS-12 History of Classical Music (Classical Era to the Present Day) .......................................................... 3
MUS-13 History and Appreciation of Jazz ........................... 3
MUS-14 History of American Popular Music ........................ 3

Ensemble Electives: Select 4 units from the following music ensembles:
MUS-38 Guitar Ensemble ............................................. 2
MUS 41A Concert Band I ............................................. 2
MUS 41B Concert Band II ............................................ 2
MUS 42A Jazz Ensemble I .......................................... 2
MUS 42B Jazz Ensemble II .......................................... 2

GE local units: 30

Total Units 60
DEGREE (12/10)
A.A. - Music: Instrumental (10420.AA)

For an Associate in Arts Degree in Music: Instrumental, students must meet the basic graduation requirements in addition to the 30-unit curriculum below.

Program Student Learning Outcomes
A. Perform selected exercises and compositions which reflect the standard repertoire of lower division instrumental performance courses at four-year institutions.
B. Analyze, identify, and apply standard theoretical concepts in the understanding of existing compositions, the organization of musical sounds, and in the creation of original compositions.
C. Demonstrate pitch recognition using either vocal or instrumental sound production, standard performance techniques, and rhythm concepts and procedures.
D. Demonstrate knowledge of the historical development of western music, prominent composers and performers, and cultural issues as they relate to the traditional and modern artistic periods.

Core:

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MUS-04A</td>
<td>Music Theory I (Diatonic Harmony)</td>
</tr>
<tr>
<td>MUS-04B</td>
<td>Music Theory II (Diatonic Harmony II)</td>
</tr>
<tr>
<td>MUS-04C</td>
<td>Music Theory III</td>
</tr>
<tr>
<td>MUS-04D</td>
<td>Music Theory IV</td>
</tr>
<tr>
<td>MUS-24A</td>
<td>Applied Music I</td>
</tr>
<tr>
<td>MUS-24B</td>
<td>Applied Music II</td>
</tr>
<tr>
<td>MUS-27A</td>
<td>Piano I</td>
</tr>
<tr>
<td>MUS-27B</td>
<td>Piano II</td>
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Music Ensemble Electives: Select 6 units from the following:

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<tr>
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<th>Units</th>
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<tbody>
<tr>
<td>MUS-27C</td>
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<td>MUS-27D</td>
<td>Piano IV</td>
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<tr>
<td>MUS-41A</td>
<td>Concert Band I</td>
</tr>
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<td>MUS-41B</td>
<td>Concert Band II</td>
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<tr>
<td>MUS-41C</td>
<td>Concert Band III</td>
</tr>
<tr>
<td>MUS-42A</td>
<td>Jazz Ensemble I</td>
</tr>
<tr>
<td>MUS-42B</td>
<td>Jazz Ensemble II</td>
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<tr>
<td>MUS-42C</td>
<td>Jazz Ensemble III</td>
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Plus six units from the following electives:

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>MUS-11</td>
<td>History of Classical Music (Early Music Through Baroque Era)</td>
</tr>
<tr>
<td>MUS-12</td>
<td>History of Classical Music (Classical Era to the Present Day)</td>
</tr>
<tr>
<td>MUS-13</td>
<td>History and Appreciation of Jazz</td>
</tr>
<tr>
<td>MUS-14</td>
<td>History of American Popular Music</td>
</tr>
<tr>
<td>MUS-36A</td>
<td>Guitar I</td>
</tr>
<tr>
<td>MUS-39A-ZZ</td>
<td>Special Problems in Music</td>
</tr>
</tbody>
</table>

GE local units: 30

Total Units 60

**MUS-28 will be offered in fall 2012**

DEGREE (4/07)
A.A. - Music: Piano (10440.AA)

For an Associate in Arts Degree in Music: Piano, students must meet the basic graduation requirements in addition to the 34-unit curriculum below.

Program Student Learning Outcomes
A. Perform selected exercises and compositions for piano which reflect the repertoire standard of lower division piano courses at four-year institutions, and evaluate and demonstrate appropriate techniques relevant to the preparation and performance of selected compositions.
B. Identify the general character and specific demands of piano compositions, work through challenging passages, and apply appropriate musical tone and dynamics in performance as it relates to the lower division piano performance coursework.
C. Analyze, identify, and apply standard theoretical concepts in the understanding of existing compositions, the organization of musical sounds, and in the creation of original compositions.
D. Differentiate traditional and contemporary techniques of composition and ear training, compose new pieces for a variety of instrumental and/or vocal settings, demonstrate pitch recognition using either vocal or instrumental sound production, and demonstrate rhythmic concepts and procedures.
E. Demonstrate knowledge of the historical development of western music, prominent composers and performers, and cultural issues as they relate to the traditional and modern artistic periods.
F. Trace the major movements within western music from its ancient beginnings to its current state, research prominent composers, develop listening skills, and translate musical concepts into written and verbal formats.

Core:

<table>
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<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>MUS-04A</td>
<td>Music Theory I (Diatonic Harmony)</td>
</tr>
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<td>Music Theory II (Diatonic Harmony II)</td>
</tr>
<tr>
<td>MUS-04C</td>
<td>Music Theory III</td>
</tr>
<tr>
<td>MUS-04D</td>
<td>Music Theory IV</td>
</tr>
<tr>
<td>MUS-11</td>
<td>History of Classical Music</td>
</tr>
<tr>
<td>MUS-12</td>
<td>History of Classical Music</td>
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<td>MUS-24A</td>
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Piano Concentration

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<tbody>
<tr>
<td>MUS-24C</td>
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<tr>
<td>MUS-24D</td>
<td>Applied Music IV</td>
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<td>MUS-24B</td>
<td>Piano II</td>
</tr>
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<td>MUS-24C</td>
<td>Piano III</td>
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<td>MUS-24D</td>
<td>Piano IV</td>
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Plus four units from the following music ensembles:

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>MUS-41A</td>
<td>Concert Band I</td>
</tr>
<tr>
<td>MUS-41B</td>
<td>Concert Band II</td>
</tr>
<tr>
<td>MUS-42A</td>
<td>Jazz Ensemble I</td>
</tr>
<tr>
<td>MUS-42B</td>
<td>Jazz Ensemble II</td>
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</tbody>
</table>

Total Units 34
A.A. - Music: Vocal (10450.AA)

For an Associate in Arts Degree in Music: Vocal, students must meet the basic graduation requirements in addition to the 37-unit curriculum below.

Program Student Learning Outcomes

A. Perform selected exercises and compositions for voice which reflect the repertoire standard of lower division voice courses at four-year institutions, and evaluate and demonstrate appropriate techniques relevant to the preparation and performance of selected compositions.

B. Identify the general character and specific demands of vocal compositions, work through challenging passages, and apply appropriate musical tone, intonation, and dynamics in performance as it relates to the lower division vocal performance coursework.

C. Analyze, identify, and apply standard theoretical concepts in the understanding of existing compositions, the organization of musical sounds, and in the creation of original compositions.

D. Differentiate traditional and contemporary techniques of composition and ear training, compose new pieces for a variety of instrumental and/or vocal settings, demonstrate pitch recognition using either vocal or instrumental sound production, and demonstrate rhythmic concepts and procedures.

E. Demonstrate knowledge of the historical development of western music, prominent composers and performers, and cultural issues as they relate to the traditional and modern artistic periods.

F. Trace the major movements within western music from its ancient beginnings to its current state, research prominent composers, develop listening skills, and translate musical concepts into written and verbal formats.

Core:

<table>
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<th>Units</th>
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<td>MUS-04A</td>
<td>Music Theory I (Diatonic Harmony)</td>
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<tr>
<td>3</td>
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Vocal Concentration

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<tbody>
<tr>
<td>1</td>
<td>MUS-24C</td>
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<td>3</td>
<td>MUS-43A</td>
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<td>3</td>
<td>MUS-43B</td>
<td>Advanced Voice</td>
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<tr>
<td>3</td>
<td>MUS-47*</td>
<td>Song Interpretation: Music Theater</td>
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<td>3</td>
<td>MUS-44</td>
<td>Chorus</td>
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<td>MUS-45</td>
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*Plus four units from the following vocal ensembles:

Spring 1

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<tbody>
<tr>
<td>3</td>
<td>MUS-04B</td>
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</table>

Fall 1

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<tr>
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<tbody>
<tr>
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</tr>
<tr>
<td>2</td>
<td>MUS-27A</td>
<td>Piano I</td>
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</table>

Music electives and ensemble courses based on degree emphasis.

Fall 2

<table>
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<th>Units</th>
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<tbody>
<tr>
<td>3</td>
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<tr>
<td>3</td>
<td>MUS-04C</td>
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Music electives and ensemble courses based on degree emphasis.

Spring 2

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<tbody>
<tr>
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<tr>
<td>3</td>
<td>MUS-12</td>
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Music electives and ensemble courses based on degree emphasis.

Recommended Sequence: Music Majors

Fall 1

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Spring 1

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<tbody>
<tr>
<td>3</td>
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<tr>
<td>1</td>
<td>MUS-24B</td>
<td>Applied Music II</td>
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</table>

Fall 2

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<tbody>
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<tr>
<td>3</td>
<td>MUS-04C</td>
<td>Music Theory III</td>
</tr>
<tr>
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Music electives and ensemble courses based on degree emphasis.

Spring 2

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<tr>
<td>3</td>
<td>MUS-12</td>
<td>History of Classical Music</td>
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Music electives and ensemble courses based on degree emphasis.

MUSIC (MUS)

Note: Many four-year colleges have a maximum number of acceptable performance course units.

MUS-01 FUNDAMENTALS OF MUSIC

(CSU breadth area C1) (IGETC area 3A)

3 units: 3 hours lecture.
Advisory: ENGL-84.

This course is a study of music fundamentals, including principles and procedures of rhythm and pitch notation, musical symbols, scales, key signatures, intervals, diatonic chords. The course is applicable to those who have learned to play and sing without training in fundamentals and to beginners in music. This course is open to all students. (11/11)

MUS-02 MUSICAL STAGE PRODUCTION

3 units: 2 hours lecture, 3 hours lab.
Limitation on enrollment: Must be able to demonstrate pitch matching skills. Advisory: ENGL-84.

This course is an intensive study of musical stage productions, including musical theater, musical revues, opera, and operettas. It is open to students interested in singing and acting. A major musical stage production is prepared and performed by students at the end of the semester. Detailed study of mise-en-scene, makeup, stage vocal techniques, and scene staging are included. All students are expected to participate in every aspect of the musical stage production. This course may be repeated three times. (2/08)

MUS-04A MUSIC THEORY I (DIATONIC HARMONY)

3 units: 3 hours lecture.
Prerequisite: MUS-01.

This course provides a thorough study of diatonic harmony found in music literature of the common practice period. This includes an introduction to harmonic and voice leading principles, triads & 7th chords, and harmonic progression. This courses is open to all students. While previous training in music is not required, it is expected that the student understands basic principles found in music (e.g., ability to read music.) This is a core requirement for the student who is pursuing an AA in music. (12/11)
MUS-04B MUSIC THEORY II (DIATONIC HARMONY II)  
3 units: 3 hours lecture.  
Prerequisite: MUS-04A.  
This course is a continuation of MUS-04A. It is the second semester of music theory studies. It completes a thorough study of diatonic harmony while introducing basic concepts found in chromatic harmony. This course is open to all students who meet the prerequisites but is intended for the music major. This is a core requirement for the student who is pursuing an AA in music. (12/11)

MUS-04C MUSIC THEORY III  
3 units: 3 hours lecture.  
Prerequisite: MUS-04B.  
This is the third of four sequential music theory courses. This sequence provides a comprehensive study of lower division music theory. Concurrent studies in melodic and rhythmic analysis and composition, harmonic analysis and an analysis of form are included. Principles of counterpoint (modal and tonal), harmony (diatonic and chromatic), and 20th century technique are included in the sequence. This course provides a thorough study of ear-training and sight-singing as it relates to the music found in the common practice period through the 20th century. Ear-training studies will include dictation (melodic, harmonic, and rhythmic), aural identification of scales, diatonic and chromatic intervals, triads, 7th chords, their functions, inversions, and qualities. An introduction to conducting patterns, fundamentals of acoustics, analysis of musical form as an aid to functional hearing, cadence identification, and error detection will be included. Sight-singing studies will include diatonic and chromatic melodies, and part-singing. The course will use theory taught in MUS-04A and MUS-04B to augment awareness of the ear training and sight-singing student. (12/04)

MUS-04D MUSIC THEORY IV  
3 units: 3 hours lecture.  
Prerequisite: MUS-04C.  
This is the fourth of four sequential music theory courses. This sequence provides a comprehensive study of lower division music theory. Concurrent studies in melodic and rhythmic analysis and composition, harmonic analysis, and an analysis of form are included. Principles of counterpoint (modal and tonal), harmony (diatonic and chromatic), and 20th century technique are included in the sequence. This course provides a thorough study of non-tonal harmony (e.g. quartal, pan-diatonic), introduction to set theory and basic twelve-tone technique, jazz harmony, and principles of improvisation. A survey of representative compositions of the 20th century with respect to style and structure is included. (12/04)

MUS-11 HISTORY OF CLASSICAL MUSIC (EARLY MUSIC THROUGH BAROQUE ERA)  
(CSU breadth area C1) (IGETC area 3A)  
3 units: 3 hours lecture.  
Advisory: ENGL-85.  
This course is a study of the important composers and their works in classical music from early music (e.g., Gregorian chant) to Bach (600 to 1750). Students will develop an understanding and appreciation of various types of classical music from different eras as a medium of cultural development and as a background toward further musical study. (12/06)

MUS-12 HISTORY OF CLASSICAL MUSIC (CLASSICAL ERA TO THE PRESENT DAY)  
(CSU breadth area C1) (IGETC area 3A)  
3 units: 3 hours lecture.  
Advisory: ENGL-85.  
This course is a study of the important composers and their works in classical music from the classical era to the present day. Emphasis is on classical, romantic, impressionistic, nationalistic, and contemporary periods in classical music history. Students will develop an understanding and appreciation of various types of classical music from different eras as a medium of cultural development and as a background toward further musical study. (12/06)

MUS-13 HISTORY AND APPRECIATION OF JAZZ  
(CSU breadth area C1) (IGETC area 3A)  
3 units: 3 hours lecture.  
Advisory: ENGL-85.  
This course presents the history of jazz music from 1890 to present, including an introduction and analysis of major jazz artists and their contributions to this American art form. Special emphasis will be given to developing listening skills appropriate to the understanding and appreciation of jazz. International influences and the development of jazz as a world musical form will be discussed. This course is a listener's guide to the appreciation of jazz and incorporates principles of structure, expression, instrumentation, cultural and social issues integral to jazz music. (12/08)

MUS-14 HISTORY OF AMERICAN POPULAR MUSIC  
(CSU breadth area C1) (IGETC area 3A)  
3 units: 3 hours lecture.  
Advisory: ENGL-85.  
This course presents an introduction to the history and literature of the popular music movement in the United States; it is a study of the relationships of popular music to the social history of America. Emphasis is on styles and personalities of folk, blues, jazz, musical theater, country & western, and rock “n” roll. This course is designed for the non-music major. (12/06)

MUS-24A APPLIED MUSIC I  
1 unit: 3 hours lab.  
Limitation on enrollment: Students enrolling in MUS-24 must be able to demonstrate a level of performance competence on their selected instrument or voice at a level equivalent to that of a music major attending a four-year college or university in the appropriate term of their freshman or sophomore year of studies. Prerequisite/Advisory: None.  
This course provides for private individual instruction in voice, piano, or traditional band or orchestra instruments at a level equivalent to that of a music major in the appropriate term of their freshman or sophomore year of music studies. It requires one lesson per week with a private instructor approved by the music department faculty. A minimum of 15 lessons must be verified. A jury examination by the music department faculty is required at the conclusion of the course. (11/08)

MUS-24B APPLIED MUSIC II  
1 unit: 3 hours lab.  
Limitation on enrollment: Students enrolling in MUS-24 must be able to demonstrate a level of performance competence on their selected instrument or voice at a level equivalent to that of a music major attending a four-year college or university in the appropriate term of their freshman or sophomore year of studies. Prerequisite: MUS-24A.  
This course provides for private individual instruction in voice, piano, or traditional band or orchestra instruments at a level equivalent to that of a music major in the appropriate term of their freshman or sophomore year of music studies. It requires one lesson per week with a private instructor approved by the music department faculty. A minimum of 15 lessons must be verified. A jury examination by the music department faculty is required at the conclusion of the course. (11/08)
MUS-24C APPLIED MUSIC III
1 unit: 3 hours lab.
Limitation on enrollment: Students enrolling in MUS-24 must be able to demonstrate a level of performance competence on their selected instrument or voice at a level equivalent to that of a music major attending a four-year college or university in the appropriate term of their freshman or sophomore year of music studies. Prerequisite: MUS-24B.
This course provides for private individual instruction in voice, piano, or traditional band or orchestra instruments at a level equivalent to that of a music major in the appropriate term of their freshman or sophomore year of music studies. It requires one lesson per week with a private instructor approved by the music department faculty. A minimum of 15 lessons must be verified. A jury examination by the music department faculty is required at the conclusion of the course. (11/08)

MUS-24D APPLIED MUSIC IV
1 unit: 3 hours lab.
Limitation on enrollment: Students enrolling in MUS-24 must be able to demonstrate a level of performance competence on their selected instrument or voice at a level equivalent to that of a music major attending a four-year college or university in the appropriate term of their freshman or sophomore year of studies. Prerequisite: MUS-24C.
This course provides for private individual instruction in voice, piano, or traditional band or orchestra instruments at a level equivalent to that of a music major in the appropriate term of their freshman or sophomore year of music studies. It requires one lesson per week with a private instructor approved by the music department faculty. A minimum of 15 lessons must be verified. A jury examination by the music department faculty is required at the conclusion of the course. (11/08)

MUS-27A PIANO I
2 units: 2 hours lecture.
Prerequisite: MUS-27A. Advisory: ENGL-85.
This course is a sequential program of instruction for the beginning piano student. It is designed to develop sight reading skill and keyboard technique incorporated into solo and ensemble music. (12/06)

MUS-27B PIANO II
2 units: 2 hours lecture.
Prerequisite: MUS-27A. Advisory: ENGL-85.
This course is a continuation of MUS-27A, and introduces two octave scales, arpeggios, triads, damper pedal technique, and musical textures and rhythms that are more complex. (12/06)

MUS-27C PIANO III
2 units: 2 hours lecture.
Prerequisite: MUS-27B. Advisory: ENGL-85.
This course is designed for the second year of piano instruction at a college level. Studies in diatonic and chromatic chord structures and their voicing (as found in piano literature), and the study of two-, three-, and four-part textures are included. This course will explore various piano styles found in the common practice period through the 21st century and will introduce piano technique. (12/06)

MUS-27D PIANO IV
2 units: 2 hours lecture.
Prerequisite: MUS-27C. Advisory: ENGL-85.
This course is a continuation of MUS-27C. It offers a more advanced study of diatonic and chromatic chord structures and their voicing as found in piano literature. The course will continue to examine various piano styles found in the common practice period through the 21st century and introduce related piano techniques. (12/06)

MUS-28 JAZZ THEORY AND IMPROVISATION
3 units: 3 hours lecture.
Prerequisite: MUS-01.
This course is a study of the basic techniques used in the understanding and performance of improvisation in the jazz style. Topics include the modes of the major scale and chord relationships, blues scales and progressions, ii-V-I progressions, rhythm changes, jazz standards and chromaticism. A study of the rhythms associated with jazz include swing, Latin, and contemporary styles. Students must provide their own instrument. (12/11)

MUS-36A GUITAR I
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is an introduction to the basic playing techniques, theory and history of the guitar. Students will develop a basic foundation for playing the guitar while surveying its historical development and various stylistic uses in artistic, folk, and popular music. (10/10)

MUS-36B GUITAR II
3 units: 3 hours lecture.
Prerequisite: MUS-36A. Advisory: ENGL-85.
This course is a continuation of skills and techniques learned in MUS-36A Beginning Guitar. Additional emphasis will be placed on classical and popular guitar styles. Chord-melody, bar chords, and hybrid picking techniques are introduced. (10/10)

MUS-38 GUITAR ENSEMBLE
2 units: 1 hour lecture, 3 hours lab.
Prerequisite: MUS-36A. Advisories: ENGL-85; MUS-36B.
The Merced College Guitar Ensemble is a continuation of the skills and techniques learned in Guitar II. Students taking this course perform together in small and large group formats. Music selected to perform will be in a variety of styles including classical, jazz, popular, and international folk genres. Emphasis on group playing and the development of individual style will be encouraged. This course may be repeated up to three times. (12/10)

MUS-39A-ZZ SPECIAL PROBLEMS IN MUSIC
1-3 units: 1-3 hours lecture.
Advisory/Prerequisite: None.
This course is designed to provide students with the opportunity to do advanced, specialized work, under the supervision of an instructor in areas not offered in regular classes. Students must develop an advanced problem in the area of music that they wish to explore. Before enrolling, students must complete a contract detailing proposed area of study. (4/07)

MUS-40 ORCHESTRA
2 units: 1 hour lecture, 3 hours lab.
Limitation on enrollment: Audition by instructor: Student must be able to sight read.
This course offers experience in performing orchestra literature, as is standard in lower division college performance ensemble classes. Public performance and exchange concerts are scheduled in addition to class rehearsals. This course may be repeated three times. (1/07)

MUS-41A CONCERT BAND I
2 units: 1 hour lecture, 3 hours lab.
Limitation on enrollment: Audition by instructor.
This course provides experience in performing concert and symphonic band literature. Public performance and exchange concerts are scheduled in addition to class rehearsals. (3/09)

MUS-41B CONCERT BAND II
2 units: 1 hour lecture, 3 hours lab.
Limitation on enrollment: Audition by instructor. Prerequisite: MUS-41A.
This is the second of four sequential courses. It offers additional experience in performing concert and symphonic band literature, as is standard in second semester lower division college performance ensemble classes. Public performance and exchange concerts are scheduled in addition to class rehearsals. (3/09)
MUS-41C CONCERT BAND III
2 units: 1 hour lecture, 3 hours lab.
Limitation on enrollment: Audition by instructor. Prerequisite: MUS-41B.
This is the third of four sequential courses. It offers additional experience in performing concert and symphonic band literature, as is standard in third semester lower division college performance ensemble classes. Public performance and exchange concerts are scheduled in addition to class rehearsals. (2/09)

MUS-41D CONCERT BAND IV
2 units: 1 hour lecture, 3 hours lab.
Limitation on enrollment: Audition by instructor. Prerequisite: MUS-41C.
This is the forth of four sequential courses. It offers additional experience in performing concert and symphonic band literature, as is standard in forth semester lower division college performance ensemble classes. Public performance and exchange concerts are schedule in addition to class rehearsals. (3/09)

MUS-42A JAZZ ENSEMBLE I
2 units: 1 hour lecture, 3 hours lab.
Limitation on enrollment: Audition by instructor; student must be able to sight read on their instruments and have some ensemble experience.
This course is the first of four sequential courses. This course is a study of jazz music in the big band tradition and modern eras, as is standard in first semester lower division college performance ensemble classes. The course emphasizes individual vocal, sectional, and ensemble instrumental performance. Tone, intonation, balance, precision, breath control, articulation, style, and improvisation are included. The Jazz Ensemble makes several public performances each year. (2/08)

MUS-42B JAZZ ENSEMBLE II
2 units: 1 hour lecture, 3 hours lab.
Prerequisite: MUS-42A.
This course is the second of four sequential courses. This course provides additional study of jazz music in the big band tradition and modern eras, as is standard in second semester lower division college performance ensemble classes. The course emphasizes individual vocal, sectional, and ensemble instrumental performance. Tone, intonation, balance, precision, breath control, articulation, style, and improvisation are included. The Jazz Ensemble makes several public performances each year. (2/08)

MUS-42C JAZZ ENSEMBLE III
2 units: 1 hour lecture, 3 hours lab.
Prerequisite: MUS-42B.
This course is the third of four sequential courses. This course provides additional study of jazz music in the big band tradition and modern eras, as is standard in third semester lower division college performance ensemble classes. The course emphasizes individual vocal, sectional, and ensemble instrumental performance. Tone, intonation, balance, precision, breath control, articulation, style, and improvisation are included. The Jazz Ensemble makes several public performances each year. (2/08)

MUS-42D JAZZ ENSEMBLE IV
2 units: 1 hour lecture, 3 hours lab.
Prerequisite: MUS-42C.
This course is the fourth of four sequential courses. This course is a study of jazz music in the big band tradition and modern eras, as is standard in fourth semester lower division college performance ensemble classes. The course emphasizes individual vocal, sectional, and ensemble instrumental performance. Tone, intonation, balance, precision, breath control, articulation, style, and improvisation are included. The Jazz Ensemble makes several public performances each year. (2/08)

MUS-43A ELEMENTARY VOICE
3 units: 3 hours lecture.
Limitation on enrollment: Must demonstrate the ability to match pitch; see instructor. Advisory: ENGL-85.
This is a course in elementary voice training. It emphasizes posture, diaphragmatic-intercostals breathing, breath support, breath control, tonal placement, articulation, stage presence, and overcoming performance anxiety. Critical evaluation, demonstration, and written reviews will be required. A basic understanding of music fundamentals, although not required, would be highly desirable. (12/06)

MUS-43B ADVANCED VOICE
3 units: 3 hours lecture.
Prerequisite: MUS-43A. Advisory: ENGL-84.
This is a course for those singers who desire more advanced vocal training. In-depth study, discussion, and personal application of vocal technique such as diaphragmatic-intercostal breathing, breath support and control, correct tonal placement and articulation is a regular part of class activities. Correct pronunciation of English, Latin, Italian and German will be studied and performed with selections from classical vocal repertoire. (2/08)

MUS-44 CHORUS
2 units: 1 hour lecture, 3 hours lab.
Limitation on enrollment: Audition by instructor.
This course is a study of standard choral literature. It emphasizes part-singing, intonation, breath control, vocal development, style, eras, musical devices, etc. The chorus makes several public appearances each year. This course may be repeated three times. (1/05)

MUS-45 CHAMBER SINGERS
2 units: 1 hour lecture, 3 hours lab.
Limitation on enrollment: Audition by instructor.
This course specializes in the study and performance of choral literature chosen from all major eras and genres of choral writing. Particular focus will be made on literature written or arranged for small vocal ensembles. Emphasis includes part-singing, intonation, breath control, vocal development, blend, tone coloring, and choral balance. The Chamber Singers perform several times throughout the year. This course may be repeated three times. (1/05)

MUS-46 CHORAL AND INSTRUMENTAL CONDUCTING
3 units: 3 hours lecture.
Advisories: ENGL-84; MUS-01 or MUS-04A or MUS-27A or MUS-36A or MUS-40 or MUS-41 or MUS-42 or MUS-44 or MUS-45.
This course covers the essential personal traits and baton techniques of conducting. Score reading, mastery of elementary patterns and techniques, repertoire for performing vocal and instrumental ensembles, and observance of successful conductors are included. Previous participation in choral or instrumental ensembles would be highly advisable for student's success in course. (5/09)

MUS-47 SONG INTERPRETATION: MUSIC THEATER
3 units: 3 hours lecture.
Limitation on enrollment: Audition by instructor. Advisory: ENGL-84.
This is a course for those singers who desire to develop their abilities in song interpretation. Particular emphasis is placed on music theater literature and presentation. Character development, motivation, blocking, facial and body gestures, and emotional discovery are all incorporated into the song interpretation. In lieu of the prerequisite, students may choose to challenge by audition with instructor. (5/09)

MUS-61ABCD (1-4) FINE AND PERFORMING ARTS – SPECIAL TOPICS
.5 - 2 units: 0.5 - 1 hour lecture, 1.5 - 6 hours lab.
(Note: The number following the letter designation indicates unit value, “1” being for 0.5 unit, “2” for 1 unit, etc., in 0.5 unit increments.)
The course covers a variety of topics of current interest to students of music. Different topics will be emphasized each time the course is offered. Sections of this course may vary in unit value depending on subject matter, meeting time, and format. Each letter (i.e., A, B, C or D) may be taken only once.
Natural Sciences
Math, Science and Engineering

DEGREE
A.A. - Natural Sciences

Program Description
The degree in Natural Sciences offers an introduction to the physical and life sciences. Students interested in a career within the areas of research, teaching, health care professions, or related fields would be served by this degree. This area of emphasis provides an opportunity to earn an AA degree in a broad area of study and is intended for students who may need to explore possibilities before committing themselves to a career or transferring to a four-year university. Students are strongly encouraged to consult with a counselor for specific information regarding their career planning.

DEGREE (12/09)
A.A. - Natural Sciences (49820.AA)

For an Associate in Science Degree with an area of emphasis in Natural Sciences, students must meet the basic graduation requirements and complete 18 units from the courses listed below.

Program Student Learning Outcomes
A. A student will be able to define and analyze basic biological and physical principles underlying modern scientific technological, health, and environmental issues and relate their analysis to global concepts.
B. A student will be able to solve scientific problems using appropriate chemical, physical, and/or mathematical principles expressed in an appropriate form.
C. A student will be able to organize, analyze and interpret observations and make predictions about the natural world using the scientific method.

Select nine units from each of the following two categories. Courses listed below may be counted as general education requirements as well as area of emphasis requirements.

Category 1: Physical Science
Choose one of the following courses:
- ASTR-01 Principles of Astronomy ........................................................................3
- CHEM-02A Introductory Chemistry .....................................................................4
- GEOL-01 Physical Geology ..................................................................................3
- PHSC-01 Introduction to Physical and Earth Science .......................................3
- PHYS-02A General Physics ..................................................................................4

Plus six units from the following courses:
- ARCH-01 Introduction to Archaeology ............................................................3
- ASTR-01L Introductory Astronomy Laboratory ...............................................1
- CHEM-02B Introductory Chemistry: Organic and Biochemistry ..................4
- CHEM-04A General Chemistry .........................................................................5
- CHEM-04B General Chemistry .........................................................................5
- GEOG-01 Physical Geography ..........................................................................3
- GEOG-01L Physical Geography Laboratory ....................................................1
- PHSC-01L Introduction to Physical and Earth Science Laboratory ..................1
- PHYS-02B General Physics ................................................................................4

Category 2: Life Science
Choose one of the following courses:
- BIOL-01* General Biology for Non-Majors .....................................................4
- BIOL-02* Human Biology ..................................................................................4
- BIOL-06 Environmental Science .....................................................................3
- BIOL-08 Conservation of Natural Resources ...............................................3
- BIOL-09 Introduction to Genetics ....................................................................3
- BIOL-16 General Human Anatomy ...................................................................4

Plus six units from the following courses:
- ANSC-10 Elements of Animal Science ......................................................3
- ANTH-01 Physical Anthropology ....................................................................4
- BIOL-04A Fundamentals Of Biology: The Cell And Evolution ..................4
- BIOL-04AH Honors Fundamentals Of Biology: The Cell And Evolution ..........4
- BIOL-04B Diversity of Life: Morphology and Physiology ..........................5
- BIOL-18 Principles of Physiology ..................................................................4
- BIOL-20 Microbiology ....................................................................................4
- BIOL-25 The Oceans .......................................................................................3
- ENTC-30 Introduction to Environmental Technology .......................................3
- PLSC-10 Elements of Plant Science .............................................................3

*Note: A student may not take BIOL-01 or BIOL-02 for credit after having taken BIOL-04A or BIOL-04AH.
Recommended Sequence: A.A. - Natural Sciences  (49820.AA)

Fall 1
CHEM-02A  Introductory Chemistry ..............................................4
BIOL-01*  General Biology for Non-Majors ......................................4
ARCH-01  Introduction to Archaeology .......................................3
GEOG-01  Physical Geography ..................................................3
Additional units can be taken as breadth and/or elective courses.

Spring (1)
CHEM-02B  Introductory Chemistry: Organic and Biochemistry ..4
ANTH-01  Physical Anthropology ...............................................4
BIOL-09  Introduction to Genetics ............................................3
Additional units can be taken as breadth and/or elective courses.

Fall (2)
PHYS-10  Concepts in Physics ..................................................3
SOIL-10  Soil Science ..............................................................3
BIOL-20  Microbiology ..............................................................4
Additional units can be taken as breadth and/or elective courses.

Spring 2
ANSC-10  Elements of Animal Science......................................3
PLSC-10  Elements of Plant Science ........................................3
Additional units can be taken as breadth and/or elective course

NATURAL SCIENCE (NTSC)

NTSC-40 A-F NATURAL SCIENCE
1 unit each; 3 to 8 day excursions.
This is a field study on the natural history of a specific region. Educational institutions and areas of scientific interest will be visited. Lecture and examinations will be given en route. The academic areas of Anthropology, Botany, Biology, Geology, Astronomy, Physics, Chemistry, and Zoology will be investigated where applicable.

NTSC-40G GRAND CANYON
1 unit: 9 hours lecture, 50 hours total lab.
In this course, students traverse the Grand Canyon on foot from the North to South Rims and this involves a backpack trip of 24.5 miles in four days. There is usually space for 6-8 non-backpackers who stay with the bus to study the rims, the canyon at Page, Arizona, and the Painted Desert. The entire trip requires seven nights and eight days. Except for two nights on the ground for backpackers, lodging is in motels and hotels. There are two evening class meetings preceding and one following the trip.

NTSC-45L ABC FIELD STUDY
1-3 units: 1-3 hours lecture and/or 3-12 hours lab by arrangement.
(Note: The second letter designation indicates unit value, "A" being for 1 unit, "B" for 2 units, and "C" for 3 units.)
This course is offered as special opportunities arise for field study in the natural sciences, such as Biology, Ecology, Physical Anthropology, Geology, and Cultural Anthropology. Work will take place in the field, the laboratory, and/or the museum providing practical experiences in observation, collection, preservation, identification, preparation for exhibition or other work required of active scientists. This course is not repeatable.
Nursing, Assistant
Allied Health, Business, and Public Safety

CERTIFICATE
Nursing Assistant (CNA)

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952D0CF60&resid=5EE3D05E952D0CF60%21223

Web site
www.mccd.edu/alliedhealth/

Program Description
The Nurse Assistant program is offered during the spring and fall semesters for 18 weeks and the summer semester for nine weeks in Merced and Los Baños.

The course provides basic skills required of the nurse assistant employed in skilled nursing facilities. The course emphasizes care of the older adult client and assistance with the activities of daily living: bathing, dressing, exercise, movement, eating, eliminating, safety measures, and rehabilitation techniques. The Nurse Assistant program also provides clinical instruction. Students will practice skills in lab and then be assigned to assist clients in a skilled nursing facility. This training meets the *California Department of Public Health requirements for eligibility to take the Nurse Assistant certification examination.

*California Department of Public Health Licensing and Certification Program (L & C) Aide and Technician Certification Section (ATCS)
1615 Capitol Ave, MS 3301; PO Box 997416;
Sacramento, CA 95899-7416; www.cdph.ca.gov

Upon successful completion of the Nurse Assistant Program, the student must pass the Certification Exam in order to become a Certified Nurse Assistant. The exam has been developed to meet the evaluation requirements of the federal and state Nurse Assistant competency evaluation legislation. The test is offered throughout the state. The test may be offered at Merced college upon completion of each training course. The test consists of two parts: written and manual.
CERTIFICATE (10/06)
Nursing Assistant (12150.CO)

Program prerequisites: Orientation workshop; CPR card - Module A/C; negative TB skin test or chest X-ray within past six months; physical within past six months; DOJ fingerprint clearance; Penal Code violations clearance.

A statement of eligibility will be awarded upon the satisfactory completion of the following course.

Program Student Learning Outcomes
A. Evaluate the responsibilities of a nursing assistant
B. Distinguish safety hazards in described simulated clinical situations
C. Explain the need for good hand washing techniques
D. Choose good body mechanics used by self and others
E. Plan techniques needed to assist clients with activities of daily living
F. Plan techniques needed to assist clients with rehabilitation procedures

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<thead>
<tr>
<th>Units</th>
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<tbody>
<tr>
<td>ALLH-60 Nurse Assistant</td>
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<td>5.5</td>
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</tbody>
</table>

Successful completion of the above course is required to apply for the CNA certification exam.

ALLIED HEALTH (ALLH)

ALLH-60 NURSE ASSISTANT
5.5 units: 3 hours lecture, 7.5 hours lab
Limitation on enrollment: Orientation workshop; CPR card - Module A/C; negative TB screening test within past 6 months or negative chest X-ray within past year; DOJ fingerprint clearance; Penal Code Violations clearance. Advisories: ENGL-80, ENGL-84.

The course provides clinical instruction and practice of basic nursing skills required of nursing assistants employed in skilled nursing facilities and extended care facilities. The course emphasizes care of the older adult client, assistance with the activities of daily living, bathing, dressing, exercise movement, eating, eliminating safety measures, cardiopulmonary resuscitation and rehabilitation techniques. Meets State Department of Public Health requirements for eligibility to take the Nursing Assistant Certification examination.(10/06)
DEGREE
A.S. - Nursing, Registered

Web site
www.mccd.edu/alliedhealth/

Program Description
All individuals who meet minimum enrollment requirements are eligible to apply to the nursing programs. Criteria and complete information on the selection process as well as the philosophy and objectives of each program are described in the Nursing Application Handbook which is available in the Merced College Bookstore and online. The handbook is extensive and may contain additional information to the following brief program outline.

Completion of the Registered Nursing Program at Merced College and all requirements of the A.S. Degree qualify students to take the *National Council Licensure Examination for Registered Nurses (NCLEX-RN). (It is the student’s responsibility to meet all requirements to sit for the NCLEX-RN exam.)

*BRN-Board of Registered Nursing;
1625 North Market Blvd; Suite N217; Sacramento, CA 95834-1924;
www.rn.ca.gov

Highlights
The Allied Health Center houses a complete Registered Nursing Skills Lab, large computer lab, conference rooms, study rooms and multiple large and small classrooms. The Registered Nursing Program has state-of-the-art equipment and software that assist students with learning current procedures.

Mission Statement
The mission of the Merced College Registered Nursing Program is to prepare our students for careers as professional Registered Nurses by providing a continually-improving educational program which is accredited by the CA Board of Registered Nursing and by instilling in our students a commitment to continued professional growth and lifelong learning.

Nursing, Registered
The Registered Nursing Program at Merced College prepares students to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN), leading to licensure as a Registered Nurse (RN) and is designed to prepare competent nurses for service in the community. The Registered Nursing Program requires two academic years beyond the completion of the prerequisite courses and non-nursing breadth requirements. Graduates will earn the Associate of Science Degree upon completion of designated courses and competency requirements.

Program Application
Applications are available from the division’s web site and the college bookstore. It is the applicant’s responsibility to submit all required paperwork within the specified dates and times. Applications will be accepted during March, specifically during a 2-3 day window. Specific dates and times will be noted on the web site.

Selection Process
The Merced College RN Program uses the California Community College chancellor’s model for selection of program applicants. The selection procedure will be a blended combination of random selection and multi-criteria screening process. Details are available online at www.mccd.edu/alliedhealth/.

Using the merit-based selection process above, those applicants scoring 80% or higher will be included in a merit-based selection pool. Randomized selection will be used to select an incoming class of students from this merit-based selection pool. These students will be sequentially numbered from one to the maximum allowed for the incoming class, including a predetermined number of alternate students.

Depending on the number of qualified applicants and constraints of the Chancellor’s Office Merit-based selection model, the merit-based selection pool will vary in size for each application period.

Multiple Applications
There is no waiting list maintained for entrance into the RN Program. Applicants applying to the program a second time must reactivate their application and are responsible for updating their information to comply with local and/or state requirements. It is possible to be accepted into the qualified merit-based selection pool more than one selection period.

If an applicant has applied to the program more than once consecutively as a fully qualified applicant, the applicant’s name will be added to the application pool an additional time for each such application.

Applicants who are selected and then declined OR are not successful completing the first semester may apply again but will not be recognized as a “consecutive” applicant. Applicants may only be accepted to the program a maximum
of two times.

Requirements for Accepted Applicants Only
The following must be completed prior to starting the first course in the RN Program:
Health clearance (including necessary immunizations)
Criminal background check (requires proof of valid social security number)
CPR certification
Drug screening

Preassessment Testing Requirement
Students selected into the RN Program must pass an assessment test (currently using TEAS). Applicants who do not meet the established score of 62 must attend a remediation program within one year in order to be considered for enrollment in the next RN class. Study materials are available in the Allied Health Office. Students may submit a copy of a previous TEAS test score in lieu of taking the test again.

Note to Transfer Students
SECTION 1. Section 66055.8 of the Education Code is amended to read:

66055.8 Notwithstanding any other provision of law, a campus of the California State University or the California Community Colleges that operates a registered nursing program shall not require a student who has been admitted to that registered nursing program and who has already earned a baccalaureate or higher degree from a regionally accredited institution of higher education to undertake any coursework other than the coursework that is unique and exclusively required to earn a nursing degree from that institution.

The System Office is interpreting this amendment to the Education Code as follows:

To obtain an associate degree in nursing, students who have baccalaureate or higher degrees are only required to complete the course work required for completion of the registered nursing program, including prerequisites and nursing course work. These students are not to be required to complete any other courses required by the college for an associate degree.

Program Student Learning Outcomes
A. A student will be able to customize nursing interventions utilizing a decision making process based upon their knowledge of pathophysiology, mathematical principles, critical thinking, patient developmental levels and cultural differences.
B. A student will be able to collaborate with an interdisciplinary health care team to demonstrate and utilize therapeutic communication techniques during interactions with their clients (as well as to obtain needed information during the phases of the nursing process).
C. A student will be able to utilize critical thinking and problem solving during the phases of the nursing process.
D. A student will exhibit an (internalized) individual code of ethics consistent with nursing professional standards and apply this code solving ethical dilemmas of patient/family care while acting as a patient advocate.
E. A student will exhibit leadership and management skills while providing entry level competent, culturally sensitive quality care.

DEGREE (2/07)
A.S. - Nursing, Registered (12500.AS)

Prerequisite courses:

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<tr>
<th>Units</th>
<th>Course</th>
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<tbody>
<tr>
<td>4</td>
<td>BIOL-16** General Human Anatomy</td>
</tr>
<tr>
<td>4</td>
<td>BIOL-18** Principles of Physiology</td>
</tr>
<tr>
<td>4</td>
<td>BIOL-20** Microbiology</td>
</tr>
<tr>
<td>4</td>
<td>CHEM-02A Introductory Chemistry</td>
</tr>
<tr>
<td>4</td>
<td>ENGL-01A College Composition and Reading</td>
</tr>
</tbody>
</table>

**It is highly recommended that once enrolled in these classes, students do not drop them. Program applicants need to understand that multiple attempts to improve grades earned in these classes can negatively affect their eligibility.

Required courses (non-nursing) which also fulfil A.S. Breadth requirements:

<table>
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<tr>
<th>Units</th>
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<tbody>
<tr>
<td>3</td>
<td>ANTH-02 Cultural Anthropology</td>
</tr>
<tr>
<td>3</td>
<td>SOC-01 Introduction to Sociology</td>
</tr>
<tr>
<td>3</td>
<td>COMM-01 Fundamentals of Speech</td>
</tr>
<tr>
<td>3</td>
<td>COMM-05 Interpersonal Communication</td>
</tr>
<tr>
<td>3</td>
<td>CLDV-09** Human Development (Also Psyc-09)</td>
</tr>
<tr>
<td>3</td>
<td>HIST-17A Political and Social History of the United States</td>
</tr>
<tr>
<td>3</td>
<td>HIST-17B Political and Social History of the United States</td>
</tr>
<tr>
<td>3</td>
<td>POSC-01 Essentials of the American Political System</td>
</tr>
<tr>
<td>3</td>
<td>HUM Any Humanities A.S. Breadth Area C (see catalog)</td>
</tr>
<tr>
<td>2</td>
<td>PHED Any activity</td>
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</table>

***Must be completed prior to or concurrently with REGN-25.

Required courses (nursing):

**First Semester**

<table>
<thead>
<tr>
<th>Units</th>
<th>Course</th>
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<tbody>
<tr>
<td>9</td>
<td>REGN-15 Nursing in Health and Illness I</td>
</tr>
<tr>
<td>2</td>
<td>REGN-16 Pharmacology I</td>
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<tr>
<td>1</td>
<td>REGN-17 Nursing Skills Simulation I</td>
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**Second Semester**

<table>
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<th>Units</th>
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<tbody>
<tr>
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<td>REGN-25 Nursing in Health and Illness II</td>
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<tr>
<td>2</td>
<td>REGN-26 Pharmacology II</td>
</tr>
<tr>
<td>1</td>
<td>REGN-27 Nursing Skills Simulation II</td>
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**Third Semester**

<table>
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<th>Units</th>
<th>Course</th>
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<tbody>
<tr>
<td>9</td>
<td>REGN-35 Nursing in Health and Illness III</td>
</tr>
<tr>
<td>1</td>
<td>REGN-36 Pharmacology III</td>
</tr>
<tr>
<td>1</td>
<td>REGN-37 Nursing Skills Simulation III</td>
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</tbody>
</table>
LVN to RN Pathway

The pathway for California Licensed Vocational Nurses requires one academic year beyond completion of the prerequisite courses, non-nursing breadth requirements, and competencies. LVN to RN students enter into the third semester of the RN curriculum identified above after completion of REGN-01 and all other prerequisites. Applicants submit an application found on the Allied Health web site. Graduates will earn the Associate in Science Degree on completion of designated courses and competency requirements. Communication, natural and social science, and nursing courses must be completed with a grade of "C" or better to be eligible for licensure requirements of the State Board of Nursing.

Enrollment eligibility to the LVN to RN pathway requires the completion of previously identified prerequisite courses. Applicants must meet the same selection requirements as generic RN students entering the program in the first semester. In addition, CLDV-09/PSYC-09 are prerequisites for the LVN to RN applicant who has already met the selection criteria. Randomized selection is used to select a cohort from the pool of qualified applicants according to available seats.

LVN to RN applicants are notified of eligibility approximately two months prior to the next semester. The LVN-RN application period remains open. To progress into the RN program, students must successfully complete the REGN-01 LVN to RN transition class which is offered when a sufficient number of qualified applicants exist.

Space in the RN program is determined based on the number of RN students progressing from the second semester to the third semester.

Applicants selected from the pool must complete the assessment test (currently using TEAS). A score less than 67 requires the applicant to complete the same remediation requirements as all other generic RN students before admission into the program. Only those students formally accepted into the program may register for courses identified as Registered Nursing Curriculum. Students may, however, enroll in other courses designated as non-nursing program requirements while awaiting selection into the program.

Third Semester

REGN-02**** Clinical Skills Transition - LVN to RN ....................... 1
REGN-35 Nursing in Health and Illness III .............................. 9
REGN-36 Pharmacology III ...................................................... 1
REGN-37 Nursing Skills Simulation III ................................. 1
REGN-38 Professional Relationships and Responsibilities I .... 1

Fourth Semester

REGN-45 Nursing in Health and Illness IV .............................. 9
REGN-46 Pharmacology IV ...................................................... 1
REGN-47 Nursing Skills Simulation IV ........................................ 1
REGN-48 Professional Relationships and Responsibilities II .... 1

****Required for LVN's who have met admission selection criteria, have successfully completed REGN-01 and have been accepted into the Registered Nursing Program's third semester.

Transfer

Credits earned in the Merced College Registered Nursing Program may be transferable to California State Universities. Since prerequisite science and social science courses vary at each institution, students are advised to consult the catalog of their intended transfer school and establish a transfer plan with the Allied Health Counselor.

REGISTERED NURSING (REGN)

REGN-01 TRANSITION LVN TO RN

2 units: 1 hour lecture, 3 hours lab.
Limitation on enrollment: California VN license. Prerequisites: BIOL 16; BIOL-20; CHEM-02A; ENGL-01A; BIOL-18. One-way corequisite: CLDV-09/PSYC-09

The series of lectures and discussions will provide concepts and principles necessary to facilitate transition of the LVN to the changing role of the registered nurse. Emphasis will be placed upon the registered nurse as a decision-making member of the health team, and of responsibilities to be assumed by such a practitioner. (10/06)

REGN-02 CLINICAL SKILLS TRANSITION - LVN TO RN

1 unit: 3 hours lab.
Limitation on enrollment: California VN license, enrolled in REGN Program 3rd semester. Prerequisites: REGN-01. One-way corequisite: REGN-35.

This course consists of practice in the clinical setting with skills and principles necessary to facilitate transition of the LVN to the changing role of the registered nurse. Clinical hours must be initiated in the first week of the semester enrolled. Emphasis is placed on nursing skills related to first year RN nursing concepts in clinical practice. (1/08)

REGN-15 NURSING IN HEALTH AND ILLNESS I

[CILC Area B,C,D,E,F,G]

9 units: 4 hours lecture, 15 hours lab.
Limitation on enrollment: 1) Enrollment in the REGN program, 2) CPR card Module AC, 3) physical within past 6 months, 4) negative TB screening test within past 6 months or negative chest x-ray within past year, 5) proof of current immunizations, 6) criminal background clearance, 7) proof of current malpractice insurance, and 8) drug screening. Prerequisites: BIOL-16, BIOL-18, BIOL-20, CHEM-02A; ENGL-01A. Two-way corequisites: REGN-16, REGN-17. Advisory: REGN-50.

This course presents basic concepts that provide the foundation upon which homeostasis is maintained in adults and/or children. Common threads integrated throughout the program are initiated: nursing process, nutrition, pharmacology, developmental levels, cultural diversity, communication, and professional role. (1/09)

REGN-16 PHARMACOLOGY I

2 units: 2 hours lecture.

This course presents introductory concepts of pharmacology and drug administration with focus on laxatives/antidiarrheal, hypoglycemics, and analgesics/anti-inflammatory agents and basic math. (1/09)

REGN-17 NURSING SKILLS SIMULATION I

[CILC Area A]

1 unit: 3 hours lab.

This course includes instruction/demonstration and return demonstration of nursing skills related to the first year nursing concepts. This course emphasizes skills and knowledge applications. (11/08)
REGN-25 NURSING IN HEALTH AND ILLNESS II
9 units: 4 hours lecture, 15 hours lab.
Limitation on enrollment: Enrollment in the REGN program 2nd semester. Prerequisites: REGN-15, REGN-16. One-way corequisite: CLDV-09/PSYC-09. Two-way corequisite: REGN-26, REGN-27. This course enlarges upon the concepts presented in REGN-15, introducing principles of care to maintain and restore normal homeostatic mechanisms in patients of all ages; study of the family unit throughout the life cycle is included, with emphasis on preventive care. (1/09)

REGN-26 PHARMACOLOGY II
2 units: 2 hours lecture.
Limitation on enrollment: Enrollment in the REGN program 2nd semester. Prerequisites: REGN-16. Two-way corequisite: REGN-25 Advisory: VOCN-46A
This course presents introductory concepts of pharmacology and medication for infectious diseases, hypertension, anemias, family/OB. (1/09)

REGN-27 NURSING SKILLS SIMULATION II
1 unit: 3 hours lab.
Limitation on enrollment: Enrollment in the REGN program 2nd semester. Prerequisites: REGN-17. Two-way corequisite: REGN-25.
This course includes instruction/demonstration and return demonstration of nursing skills related to the first year nursing concepts. This course emphasizes skills and knowledge applications. (11/08)

REGN-35 NURSING IN HEALTH AND ILLNESS III
9 units: 4 hours lecture, 15 hours lab.
Limitation on enrollment: 1) Enrollment in the REGN program 3rd semester, 2) CPR card Module AC, 3) physical within past 6 months, 4) negative TB screening test within past 6 months or negative chest x-ray within past year, 5) proof of current immunizations, 6) criminal background clearance, 7) drug screening, and 8) proof of current malpractice insurance. Prerequisites: CLDV-09/PSYC-09; REGN-25 or REGN-01. One-way corequisite: REGN-38. Two-way corequisite: REGN-36, REGN-37.
This course enlarges upon the concepts presented in REGN-15 and REGN-25 by introducing principles of care to maintain and/or restore homeostatic mechanisms in acute health problems. Prototype disease processes associated with each concept are studied in relation to preventive and restorative nursing care. Concurrent practice in the college laboratory and clinical experience in community facilities are required. (1/09)

REGN-36 PHARMACOLOGY III
1 unit: 1 hour lecture.
This course presents ongoing concepts of pharmacology compatible with respiratory, cardiac/vascular, cancer, DMARDs and immunosuppressant therapies for adults and children. (1/09)

REGN-37 NURSING SKILLS SIMULATION III
1 unit: 3 hours lab.
This course presents demonstration of higher-level nursing concepts related to second-year nursing courses. The third-semester student will assume the facilitator role with other nursing students in skill check-offs. (11/08)

REGN-38 PROFESSIONAL RELATIONSHIPS AND RESPONSIBILITIES I
1 unit: 1 hour lecture.
Limitation on enrollment: Enrollment in the REGN program 3rd semester. One-way corequisite: REGN-35.
The course introduces the student to the professional role of the registered nurse: its status, its responsibilities, and inherent problems as influenced by historical and social change. The focus is on the individual nurse and on the profession as a whole. (1/09)

REGN-45 NURSING IN HEALTH AND ILLNESS IV
9 units: 4 hours lecture, 15 hours lab.
This course presents advanced concepts and skills in caring for the client with critical or multiple health problems. It emphasizes rehabilitation and adaptation to a compromised and/or declining health status. Concurrent practice in the college lab and clinical experience in community health facility is required. (1/09)

REGN-46 PHARMACOLOGY IV
1 unit: 1 hour lecture.
This course presents ongoing concepts of pharmacology for psychiatric (adult/teenagers), shock, cardiac arrhythmias, neurological and neuromuscular, and endocrine conditions. (01/09)

REGN-47 NURSING SKILLS SIMULATION IV
1 unit: 3 hours lab.
This course presents instruction and demonstration of higher level nursing concepts related to second-year nursing courses. The second-year student will assume a facilitator role with other nursing students in nursing care planning. (10/06)

REGN-48 PROFESSIONAL RELATIONSHIPS AND RESPONSIBILITIES II
1 unit: 1 hour lecture.
Limitation on enrollment: Enrollment in the REGN program 4th semester. Prerequisite: REGN-38. One-way corequisite: REGN-45.
This course is an introduction to leadership and management principles applied to the health care field. Discussions will include leadership and management theories, organizational structure, problem-solving, decision-making, conflict management, effective communication, change process, planning process, motivational theories, and performance appraisal. (10/06)

REGN-49A-ZZ SPECIAL TOPICS IN NURSING
.5-3 units: .5-3 hours lecture, 0-6 hours lab.
Limitation on enrollment: Enrollment in an accredited nursing program, or a graduate from an accredited nursing program, or possession of a valid nursing license.
This course is designed to address special topics in nursing to meet the current needs of students. It will provide students access to instruction that will assist them in acquiring the most up-to-date information possible in order to cope with the rapidly changing health care environment. (2/08)

REGN-50 NURSING CAREER SEMINAR
.25 unit: .45 total hours lecture.
Prerequisite/Advisory: None.
This course introduces students to the various roles and responsibilities of nursing practitioners, including knowledge of educational levels as well as behaviors and skills. Merced College nursing programs are described, including admission requirements and procedures. Students are graded on credit/no credit basis. May be repeated once. (10/06)
Nursing, Vocational
Allied Health, Business and Public Safety

DEGREE
A.A. - Nursing, Vocational

CERTIFICATE
Nursing, Vocational

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Web site
www.mccd.edu/allied_health

Program Description
The Vocational Nursing curriculum comprises three semesters of combined didactic and clinical work on campus and at affiliated health care facilities. Upon satisfactory completion of the prerequisites and the nursing courses, a Certificate of Achievement is awarded and the student is then eligible for the National Licensure Examination. An Associate in Arts Degree is also available for those students who complete the Merced College General Education requirements.

In accordance with the rules and regulations of the *Board of Vocational Nurse and Psychiatric Technicians Examiners, a student’s previous education and/or experience will be evaluated by the Nursing Department on an individual basis for credit and/or advanced placement.

*BVNPT-Board of Vocational Nursing and Psychiatric Technicians; 2535 Capitol Oaks Dr, Suite 205; Sacramento, CA 95833; www.bvnpt.ca.gov

Highlights
The Allied Health Center houses a complete Vocational Nursing Skills Lab, large computer lab, conference rooms, study rooms and multiple large and small classrooms. The Vocational Nursing Program has state-of-the art equipment and software that assist students with learning current procedures.

Nursing, Vocational
Minimum requirements for admission to the LVN program:

1. Must be a high school (or higher) graduate with a grade point average of 2.0 or higher, or the equivalent as measured by the General Education Development (G.E.D.) Test or by the California State High School Proficiency examination. Applicants with high school grade point averages below 2.0 must have completed 15 units of college-level work with a grade point average of 2.0 or higher.
2. Must be in good health.
3. Must have completed within five years of the date of application the following courses or their equivalent with a grade of “C” or better: BIOL-16 or 50, NUTR-10, ALLH-67, and VOCN-46A.

Application: Qualified applicants must meet the above prerequisites, provide transcripts documenting high school graduation or G.E.D./Proficiency score results and file a completed application with the Allied Health Office. Applications are accepted year round, but enrollment is determined on a first come, first served basis.

A freshman class will be admitted every fourth semester. For further information contact the Allied Health Counselor.

Enrollment in the Nursing Program requires that students purchase appropriate nursing uniforms, have a physical examination, show proof of immunization, have a current CPR card, and have transportation to the clinical facilities.

Program Start Dates
Spring 2013
Fall 2014
Spring 2015

DEGREE
A.A. - Nursing, Vocational (12550.AA)

An Associate in Arts Degree is available for those students who complete the Merced College General Education requirements and the following courses.

Program Student Learning Outcomes
A. Collaborate with the health care team in providing care.
B. Incorporate knowledge of nursing curriculum to pass the NCLEX exam.
C. Utilize the nursing process to establish a plan of care, recognizing value and commitment to the practice of nursing standards.
D. Apply a code of ethics in solving ethical dilemmas while providing patient/family care.
E. Utilize therapeutic communication to obtain positive outcome in planning and goal setting for patient care.
F. Demonstrate effective knowledge, skills, and abilities to a nursing career that is constantly evolving and to focus intently on innovative approaches to patient care.
Prerequisites: BiOL-16, BiOL-50, NUTR-10, ALLH-67, VOCN-46A.

First Semester
- VOCN-40: Foundations of Nursing 11 units
- VOCN-46B: Pharmacology for Nurses 14 units
- VOCN-47A: Nursing Guidance I 1 unit

Second Semester
- VOCN-42: Principles and Practices of Nursing Care I 14 units
- VOCN-47B: Nursing Guidance II 1 unit

Third Semester
- VOCN-44: Principles and Practices of Nursing Care II 14 units
- VOCN-47C: Nursing Guidance III 1 unit

55 units

A student must achieve a final score of 75% or better in each of the core nursing courses to continue in the program. When two courses must be taken concurrently, passing grades must be maintained in both for the student to continue in either course.

CERTIFICATE
Nursing, Vocational (12550.CT)

 Upon satisfactory completion of the prerequisites and the nursing courses, a Certificate of Achievement is awarded and the student is then eligible for the National Licensure Examination

Prerequisites: BiOL-16, BiOL-50, NUTR-10, ALLH-67, VOCN-46A.

First Semester
- VOCN-40: Foundations of Nursing 11 units
- VOCN-46B: Pharmacology for Nurses 14 units
- VOCN-47A: Nursing Guidance I 1 unit

Second Semester
- VOCN-42: Principles and Practices of Nursing Care I 14 units
- VOCN-47B: Nursing Guidance II 1 unit

Third Semester
- VOCN-44: Principles and Practices of Nursing Care II 14 units
- VOCN-47C: Nursing Guidance III 1 unit

55 units

A student must achieve a final score of 75% or better in each of the core nursing courses to continue in the program. When two courses must be taken concurrently, passing grades must be maintained in both for the student to continue in either course.
VOCN-47A NURSING GUIDANCE I
1 unit: 1 hour lecture.
Limitation on enrollment: Enrollment in the Vocational Nursing program. Two-way corequisites: VOCN-40, VOCN-46B.
This course examines socialization and interpersonal communications related to vocational nursing. Course topics include verbal and non-verbal communication; communication problems in the nurse-patient relationship; the hospital as a working and learning environment; self-actualization relating to the elderly; and death and dying. (1/07)

VOCN-47B NURSING GUIDANCE II
1 unit: 1 hour lecture.
This course examines the nature of stress and its influences on coping and adapting. Related topics examined include crisis and crisis intervention, and psychophysiological and somatopsychic responses to stress and anxiety. (1/07)

VOCN-47C NURSING GUIDANCE III
1 unit: 1 hour lecture.
Limitation on enrollment: Enrollment in the Vocational Nursing program. Prerequisite:-VOCN-42. Two-way corequisite: VOCN-44.
This course examines current and evolving patterns of mental health care and the shifts from inpatient custodial care to community-based treatment for the mentally ill. This course also examines the health-illness continuum, psychopathology, neuroses and psychoses, clinical disorders and maladaptations of behavior, and psychopharmacological approaches to treatment. (1/07)

VOCN-48 INTRAVENOUS THERAPY/BLOOD WITHDRAWAL
2 units: 2 hours lecture.
Limitation on enrollment: Licensed as a Vocational Nurse (required by section 2860.5 of the Board of Vocational Nurses and Psychiatric Technicians) or Registered Nurse.
This short-term course is designed to prepare nurses to start and superimpose intravenous fluid and perform blood withdrawal as ordered by the physician. The course will cover psychological preparation of the patient, selection of equipment, aseptic technique, relevant anatomy and physiology, pharmacology of intravenous solutions, and administering blood components. Students will perform simulated and actual intravenous catheterization and blood withdrawals. (12/09)
Philosophy
Social Sciences, Humanities and Fine Arts

DEGREE
A.A. - Philosophy

Program Description
Philosophical studies at Merced College stress analytical reasoning, writing, and oral expression. The study of philosophy has had an historic role in liberal arts education because it develops careful, independent thinking and aids in defining one’s most fundamental values and beliefs.

The philosophy curriculum is designed around a core education that includes the history of philosophy, ethics, and either logic or comparative religions. Students choose among elective courses in humanities and the history of civilization.

The philosophy department is dedicated to the pursuit of excellence. We recognize that philosophy and philosophy education enhance the cultural, economic, and social aspects of the community. The study of philosophy will improve the critical thinking skills that are applicable to any area of endeavor, while at the same exploring the deepest aspects of self, community, and existence.

Career Opportunities
Philosophical training at Merced College prepares the A.A. graduate for transfer to four-year institutions, or to enter into the work force in many fields. Graduates of philosophy traditionally enter fields that include education, research, law, business, high technology, government, and ministry. Beyond preparing students for professional life, the Philosophy Department at Merced College is dedicated to personal enrichment through deep reflection on all facets of human life.

DEGREE
A.A. - Philosophy (15400.AA)

For an Associate in Arts Degree in Philosophy, the student must complete the graduation requirements and the 21-unit curriculum listed below.

Program Student Learning Outcomes
A. Demonstrate a basic knowledge of the fundamental concepts of the major figures in the history of Western philosophy, as well as some figures outside the traditional Western canon.
B. Analyze and critically evaluate primary philosophical texts.
C. Formulate and defend positions on several philosophical issues, questions, and/or problems, both orally and in written form.
D. Plan and construct an essay on an individual philosopher, a movement in philosophy, or a philosophical question.

<table>
<thead>
<tr>
<th>Course</th>
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<th>Units</th>
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<td>HIST-04A</td>
<td>History of Civilization: Part I</td>
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<td>HIST-04B</td>
<td>History of Civilization: Part II</td>
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<tr>
<td>HUM-01*</td>
<td>Studies in Humanities - Ancient through</td>
<td>3</td>
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<td>Renaissance</td>
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<td>PHIL-03**</td>
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<td>PHIL-04***</td>
<td>Modern Philosophy</td>
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<td>PHIL-05</td>
<td>Contemporary Moral and Social Issues</td>
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<td>PHIL-10</td>
<td>Critical Thinking</td>
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<td>PHIL-12</td>
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<tr>
<td>PHIL-15</td>
<td>Comparative Religions</td>
<td>3</td>
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*Honors HUM-01H can be substituted for HUM-01; Honors HUM-02H can be substituted for HUM-02. HUM-01 is offered in the fall semester only. HUM-02 is offered in the spring semester only.

**PHIL-03 will be offered fall.
***PHIL-04 will be offered spring.
PHILOSOPHY (PHIL)

PHIL-01 INTRODUCTION TO PHILOSOPHY
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisites: ENGL-85. Advisories: ENGL-01A.
This course introduces perennial questions in philosophy, such as: Who am I? What is the nature of reality? How do we know what we know? What is the nature of religious belief? These questions will be discussed in light of philosophical readings taken from the traditional and modern Western philosophical canon, as well as from non-canonical sources. (3/08)

PHIL-01H HONORS INTRODUCTION TO PHILOSOPHY
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Limitation on enrollment: Enrollment in the Honors program. See the college catalog for a description of enrollment requirements.
Advisory: ENGL-01A
This course introduces perennial questions in philosophy, such as: Who am I? What is the nature of reality? How do we know what we know? What is the nature of religious belief? These questions will be discussed in light of philosophical readings taken from classical and modern Western sources, as well as from non-Western sources. There will be an emphasis on collaborative learning, research, and writing. Students enrolled in this class must be enrolled in the Honors Program. (4/06)

PHIL-03 ANCIENT PHILOSOPHY
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisites: ENGL-85.
This course presents an introduction to the history of philosophy from the Pre-Socratics to the Renaissance, with emphasis on the Pre-Socratics through Aristotle. (10/07)

PHIL-04 MODERN PHILOSOPHY
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisites: ENGL-85.
This course presents an introduction to the history of philosophy from the Renaissance to the present, with emphasis on Descartes through Kant. (10/07)

PHIL-05 CONTEMPORARY MORAL AND SOCIAL ISSUES
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Prerequisites: ENGL-85. Advisories: ENGL-01A.
This course is concerned with the philosophical examination of moral and social issues, such as capital punishment, abortion, war, animal rights, and economic justice. These issues will be discussed in light of ethical theories and moral reasoning stemming from Western and non-Western philosophical sources. (3/08)

PHIL-10 CRITICAL THINKING
(CSU breadth area A3) [CILC area G]
3 units: 3 hours lecture.
Prerequisites: ENGL-85. Advisories: ENGL-01A.
This is a practical course in sound and logical reasoning. The focus of this course is to develop the abilities to analyze, to criticize, and to reach reasoned conclusions. This includes the ability to recognize and avoid common fallacies in reasoning, and to construct cogent arguments and essays. (3/08)

PHIL-12 LOGIC
(CSU breadth area A3)
3 units: 3 hours lecture.
Prerequisites: ENGL-85.
This course presents a study of correct reasoning, concentrating on developing the skills for distinguishing logically correct from logically incorrect arguments. The emphasis is on the formal aspects of modern symbolic logic and informal fallacies, although the classical syllogism and scientific method are also covered. (5/07)

PHIL-13 CRITICAL REASONING AND WRITING (Also: ENGL-13)
(CSU breadth area A3) (IGETC area 1B) [CILC area G]
3 units: 3 hours lecture.
Prerequisite: ENGL-01A.
This course offers instruction in argumentative and critical writing, critical thinking, research strategies, information literacy, and proper documentation. Readings feature mostly non-fictional essays and books that reflect diverse cultural and gender perspectives on a variety of contemporary political and social issues, especially those involving race, ethnicity, and gender. ENGL-13/PHIL-13 meets the IGETC critical thinking/composition requirement. (3/12)

PHIL-13H HONORS CRITICAL REASONING AND WRITING (Also: ENGL-13H)
(CSU breadth area A3) (IGETC area 1B) [CILC area G]
3 units: 3 hours lecture.
Limitation on enrollment: Enrollment in the Honors Program.
Prerequisite: ENGL-01A.
This course offers instruction in argumentative and critical writing, critical thinking, research strategies, information literacy, and proper documentation. Readings feature mostly non-fictional essays and books that reflect diverse cultural and gender perspectives on a variety of contemporary political and social issues, especially those involving race, ethnicity, and gender. ENGL-13/PHIL-13 meets the IGETC critical thinking/composition requirement. (3/12)

PHIL-15 COMPARATIVE RELIGIONS
(CSU breadth area C2) (IGETC area 3B)
3 units: 3 hours lecture.
Advisory: ENGL-01A.
This course surveys the historical background and fundamental philosophical concepts of the major religions of the world, including Hinduism, Buddhism, Shinto, Confucianism, Judaism, Christianity, Islam, and some typical basic religions. (4/06)
Photography

Social Sciences, Humanities and Fine Arts

DEGREE
A.A. - Photography

CERTIFICATE
Photography

Gainful Employment Disclosure Metrics

Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:

https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60!223

Program Description

The study of photography will enrich the student’s experience of the world and encourage the student to draw upon creative resources. An education in photography can lead to professional or vocational careers, as well as enhance abilities in other fields. The photography department offers a foundation in theoretical and practical skills, and the opportunity to work in a wide variety of photographic and digital media. The Photography Program provides transfer, professional preparation, personal development, general interest, and general education, as well as an Associate in Arts degree and a Certificate in Photography.

DEGREE
A.A. - Photography (10500.AA)

For an Associate in Arts Degree in Photography, students must meet the graduation requirements and complete the 28-unit curriculum listed below. The courses listed below must be in addition to those taken to satisfy basic graduation requirements.

Program Student Learning Outcomes

A. Demonstrate a knowledge of the techniques and processes involved in a variety of photographic art forms, including traditional black and white photography, and digital photography.
B. Create photographic works of art integrating aesthetics with the elements and principles of design theory and composition.
C. Identify, distinguish and assess individual photographic styles.
D. Build upon their appreciation and understanding of the various multicultural and philosophical patterns of traditional and contemporary photography as it relates to the development of art throughout history.

Units

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<tr>
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<th>Course Title</th>
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<td>ART-40A</td>
<td>Digital Art</td>
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<td>PHOT-10A</td>
<td>Basic Photography</td>
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<td>PHOT-10B</td>
<td>Intermediate Photography</td>
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<td>PHOT-11A</td>
<td>Digital Camera Basics</td>
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<td>PHOT-30</td>
<td>Introduction to Color Photography</td>
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<td>PHOT-31</td>
<td>Basic View Camera</td>
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<td>PHOT-32</td>
<td>Studio Photography</td>
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<td>Plus three units of Art History from:</td>
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<td>ART-02</td>
<td>Art History: Renaissance through 20th Century</td>
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<td>ART-06</td>
<td>Art of the 20th Century</td>
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<td>Plus three units from the following photo electives:</td>
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<td>JOUR-32</td>
<td>Newspaper Staff</td>
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<td>PHOT-34</td>
<td>Photo Expression</td>
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<tr>
<td>PHOT-49</td>
<td>Independent Study in Photography</td>
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28
CERTIFICATE
Photography (10500.CL)

A Certificate of Achievement in Photography may be earned by completing the 28-unit curriculum listed below.

Program Student Learning Outcomes

A. Demonstrate a knowledge of the techniques and processes involved in a variety of photographic art forms, including traditional black and white photography, and digital photography.

B. Create photographic works of art integrating aesthetics with the elements and principles of design theory and composition.

C. Identify, distinguish and assess individual photographic styles.

D. Build upon their appreciation and understanding of the various multicultural and philosophical patterns of traditional and contemporary photography as it relates to the development of art throughout history.

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<tr>
<th>Units</th>
<th>Arts and Sciences Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-15</td>
<td>Fundamentals of Design in Art</td>
</tr>
<tr>
<td>ART-40A</td>
<td>Digital Art</td>
</tr>
<tr>
<td>PHOT-10A</td>
<td>Basic Photography</td>
</tr>
<tr>
<td>PHOT-10B</td>
<td>Intermediate Photography</td>
</tr>
<tr>
<td>PHOT-11A</td>
<td>Digital Camera Basics</td>
</tr>
<tr>
<td>PHOT-30</td>
<td>Introduction to Color Photography</td>
</tr>
<tr>
<td>PHOT-31</td>
<td>Basic View Camera</td>
</tr>
<tr>
<td>PHOT-32</td>
<td>Studio Photography</td>
</tr>
</tbody>
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Plus three units of Art History from:

<table>
<thead>
<tr>
<th>Units</th>
<th>Arts and Sciences Courses</th>
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</thead>
<tbody>
<tr>
<td>ART-02</td>
<td>Art History: Renaissance through 20th Century</td>
</tr>
<tr>
<td>ART-06</td>
<td>Art of the 20th Century</td>
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Plus three units from the following photo electives:

<table>
<thead>
<tr>
<th>Units</th>
<th>Arts and Sciences Courses</th>
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<tbody>
<tr>
<td>JOUR-32</td>
<td>Newspaper Staff</td>
</tr>
<tr>
<td>PHOT-34</td>
<td>Photo Expression</td>
</tr>
<tr>
<td>PHOT-49</td>
<td>Independent Study in Photography</td>
</tr>
</tbody>
</table>

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PHOTOGRAPHY (PHOT)

PHOT-10A BASIC PHOTOGRAPHY
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: PHOT-10B.
This is an elementary course covering camera and darkroom techniques of black and white photography. Topics include exposure control, film development, contact printing, enlarging, composition, lighting, filters, print finishing, and mounting. (11/04)

PHOT-10B INTERMEDIATE PHOTOGRAPHY
3 units: 2 hours lecture, 3 hours lab.
Prerequisites: PHOT-10A or PHOT-11A.
This is a course dealing with the practical application of the basic principles of photography, emphasizing technical and artistic control and the perfection of processing, and composition. The course also provides a broad introduction to studio lighting. (11/04)

PHOT-11A DIGITAL CAMERA BASICS
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: PHOT-10A.
This course introduces students to digital cameras through lectures, hands-on experience, and computer use. Instruction includes digital camera functions, technical and creative control, computer processing of images, and digital output options. (11/04)

PHOT-30 INTRODUCTION TO COLOR PHOTOGRAPHY
3 units: 2 hours lecture, 3 hours lab.
Prerequisite: PHOT-10B.
This course covers the introduction to theory and practice of color photography. Students will learn color processing and printing as well as lighting and exposure for color. (11/04)

PHOT-31 BASIC VIEW CAMERA
2 units: 1 hour lecture, 3 hours lab.
Prerequisite: PHOT-10B.
Basic view camera is a class in the fundamentals of operating a 4x5 view camera in the studio and the field. Processing and printing of large format film is included as a regular part of class assignments. (11/04)

PHOT-32 STUDIO PHOTOGRAPHY
2 units: 1 hour lecture, 3 hours lab.
Prerequisite: PHOT-10B.
This course includes advanced black and white and some color assignments. Students will become acquainted with commercial equipment and processing. Assignments will include portraiture, lighting, and small and large products. Design and layout may be incorporated into assignments. (11/04)

PHOT-34 PHOTO EXPRESSION
2 units: 1 hour lecture, 3 hours lab.
Prerequisite: PHOT-10B.
Photo expression is a course which explores the possibilities of the use of visual language in relation to the thought process. Advanced techniques of camera use, film handling, and printing will be included, but emphasis will be placed on the personal expression of ideas. (11/04)

PHOT-49 INDEPENDENT STUDY IN PHOTOGRAPHY
1 unit: 3 hours lab.
Prerequisites: PHOT-10A or PHOT-11A.
This course covers a variety of topics and/or activities of current interest in the field of photography. This course may be repeated three times. (11/04)
Physical Education
Career and Technical Education

DEGREE
A.A. - Physical Education

Program Description
GENERAL INFORMATION: All physical education classes are co-ed unless otherwise stated in the course description and/or Schedule of Classes. The dress for Merced College Physical Education activities classes is dependent upon the nature of activity; students will be advised of proper dress at time of orientation.

Staff members of the Life Fitness and Health Division will screen all students participating in physical activity classes who show a medical problem which may adversely affect their participation. Students so identified will be required to obtain a physician’s clearance. When appropriate, screening may be achieved through the Disabled Student Services Office. Students who lead a sedentary lifestyle or who have a history of heart disease or other medical conditions should check with their physician before starting any exercise program.

Students are advised to use caution when participating in physical activity classes. Strains, pulls, and similar injuries may be caused by improper use of equipment, or failure to follow directions of instructors.

DEGREE (1/05)
A.A. - Physical Education (08500.AA)

For an Associate in Arts Degree in Physical Education, students should meet the graduation requirements and complete the 20-unit curriculum listed below.

### PHYSICAL EDUCATION (PHED)

**PHED-01 INTERCOLLEGIATE ATHLETICS**

3 units: 10 hours lab. Limitation on enrollment: This is a varsity team sport requiring coach's or academic athletic advisor's approval.

This is a course teaching theory, practice, and game performance of the designated competitive sport. This course may be repeated three times.

- PHED-01D Football (Men) Advisory: PHED-12C (12/07)
- PHED-01G Swimming (Men/Women) Advisory: PHED-13H (12/07)
- PHED-01I Track and Field (Men/Women) Advisory: PHED-03 (2/08)
- PHED-01J Water Polo (Men/Women) Advisory: PHED-13F (12/07)
- PHED-01K Softball (Women) Advisory: PHED-12H (2/08)

- PHED-01B Basketball (Men/Women) Advisory: PHED-12B (4/08)

1.5-3 units: 5-10 hours lab. Limitation on enrollment: This is a varsity team sport requiring coach's or academic athletic advisor's approval.

This is a course teaching theory, practice, and game performance of the designated competitive sport. This course may be repeated three times.

**PHED-03 VARSITY CONDITIONING**

1-2 units: 3-6 hours lab. Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

This is an open laboratory experience designed for those people who desire an individualized strength and conditioning program using a combination of exercise machines, free weights, and aerobic training methods. This class is geared to athletes and individuals who are interested in preparing for varsity competition. Multiple workouts are required per week. This course may be repeated three times. (1/06)

**LIFE FITNESS ACTIVITY**

**PHED-10A AEROBICS**

0.5 - 1 unit: 1.5 - 3 hours lab. Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

This is a choreographed exercise program set to music which improves cardiovascular fitness while conditioning and toning the whole body. Strenuous physical activity is required. Good general health is advised. This course may be repeated three times. (1/06)

**PHED-10B AEROBIC CIRCUIT TRAINING**

0.5 - 1 unit: 1.5 - 3 hours lab. Advisory: Good general health; absence of medical conditions that would prevent physical activity.

This class uses a variety of aerobic activities to improve cardio-respiratory endurance. Circuit machines used include steppers, treadmills, cycling, rowing, recumbent bikes, and cross trainers. Emphasis will be placed on monitoring psychological response to exercise and teaching proper stretching, warm-up, training at target rate, and warm down methods. A pre-test and post test will be administered to evaluate fitness level and monitor improvement. The course may be repeated three times. (2/10)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
<th>Description</th>
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<tbody>
<tr>
<td>HLTH-11</td>
<td>Advanced First Aid and Emergency Care</td>
<td>3</td>
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<tr>
<td>PHED-10 A-H</td>
<td>Life Fitness Activity Course</td>
<td>2</td>
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<tr>
<td>PHED-11 A-E</td>
<td>Individual or Dual Activity Course</td>
<td>1</td>
<td></td>
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<tr>
<td>PHED-12 A-H</td>
<td>Team Activity Course</td>
<td>1</td>
<td></td>
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<tr>
<td>PHED-13 A-H</td>
<td>Aquatics</td>
<td>1</td>
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<tr>
<td>PHED-20</td>
<td>Introduction to Physical Education</td>
<td>3</td>
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<td>RECR-30</td>
<td>Introduction to Community Recreation</td>
<td>3</td>
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<td>SPMD-42</td>
<td>Introduction to Athletic Training</td>
<td>3</td>
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<td>Plus at least three units from the following:</td>
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<tr>
<td>PHED-03</td>
<td>Varsity Conditioning</td>
<td>2</td>
<td></td>
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<tr>
<td>PHED-14 A-D</td>
<td>Dance</td>
<td>3</td>
<td></td>
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<tr>
<td>PHED-31</td>
<td>Techniques of Sports Officiating</td>
<td>2</td>
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<tr>
<td>PHED-32</td>
<td>Techniques of Sports Officiating</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>HLTH-15</td>
<td>Drugs, Alcohol, and Tobacco</td>
<td>3</td>
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<tr>
<td>Total Units</td>
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<td>20</td>
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</tbody>
</table>
PHED-10C CIRCUIT WEIGHT TRAINING  
0.5 - 1 unit: 1.5 - 3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent physical activity.  
This is a fitness class requiring three workouts per week. The equipment (single station exercise machines) and routine utilized in the fitness lab are designed to exercise all major muscle groups for a well-rounded fitness program with the non-athletic in mind. In addition to regular students, circuit training has proven especially beneficial for women, older men, and others not interested in weight training but who desire increased muscle tone and cardiovascular fitness. This course may be repeated three times. (1/06)

PHED-10D WEIGHT TRAINING  
0.5 - 1 unit: 1.5 - 3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.  
This is an open-laboratory experience for those people who desire an individualized strength program using a combination of exercise machines and free weights. This class is designed specifically to improve strength. The class is suited for athletes and men and women of all age groups who are interested in muscle toning and muscle building. This course may be repeated three times. (1/06)

PHED-10E FITNESS THROUGH ACTIVITY  
0.5 - 1 unit: 1.5-3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.  
Students will attain optimal levels of fitness by applying techniques used in a variety of team and/or individual activities. Drills and activities closely emulate actual conditions of competition performance. This course may be repeated three times. (1/06)

PHED-10F FLEXIBILITY AND CARDIOVASCULAR FITNESS  
2 units: 6 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.  
Practical applications of all aspects of flexibility and cardiovascular conditioning are presented and performed. A class of student presentation is used to insure a gradual, safe, and total physiological adaptation of the student to exercise. A gradual, progressive, safe, and eventually total body fitness experience is pursued. Geriatric fitness adaptations are emphasized. The course may be repeated three times. (12/07)

PHED-10G FITNESS EVALUATION AND EXERCISE PRESCRIPTION  
2 units: 1 hour lecture, 3 hours lab.  
Prerequisite/Advisory: None.  
Students in this physiologically-based program will receive individualized exercise programs based on results obtained from tests administered in the fitness laboratory. Tests given include VO2, strength, flexibility, body fat, cholesterol level, and nutritional analysis. In addition to fitness evaluation and exercise prescription, the course will include lectures, consultations, and demonstrations on a variety of physiologically-based exercise and nutrition material. Lab fees will be charged for some optional tests.

PHED-10H WALKING FOR CARDIOVASCULAR CONDITIONING AND FLEXIBILITY  
1 units 3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.  
This course is designed to improve cardiovascular efficiency, flexibility and strength through the use of walking and related activities. Students will use the latest techniques and equipment to improve walking performance. This course may be repeated three times. (12/07)

INDIVIDUAL OR DUAL ACTIVITY

PHED-11A BADMINTON  
.5-1 units: 1.5-3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.  
This is a course teaching basic skills of badminton. The following shots, backhand and forehand smash, overhead clear, drop shot and serve, will be covered along with rules and strategy of the game. Class play will consist of singles, doubles, mixed doubles, and tournaments. This course may be repeated three times. (12/07)

PHED-11B RACQUETBALL  
.5-1 units: 1.5-3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.  
This is an introductory course in racquetball that teaches the basic strokes, scoring, and strategy. Class play will consist of singles, doubles and tournaments. This course may be repeated three times. (12/07)

PHED-11C TENNIS  
.5-1 units: 1.5-3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.  
This course teaches basic skills of tennis including gripping the racket, body positioning, footwork, swing and follow through. Emphasis is placed on forehand, backhand, and the serve fundamentals. Drills and actual game participation are emphasized. History, rules, scoring and tennis etiquette are also taught. This course may be repeated three times. (12/07)

PHED-11D GOLF  
.5-1 units 1.5-3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.  
Through lecture, demonstration, video tapes, and drills, the basic, the basic principles of the golf swing will be studied and analyzed. The design of a golf course will be studied in addition to the types of equipment. Golf course and player etiquette will be stressed in addition to the rules of golf. This class also includes student participation, practicing golf shots, playing golf holes and learning about tournament competition. This course may be repeated three times. (12/07)

PHED-11E BOWLING  
.5-1 unit: 1.5-3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.  
This is an introductory course in bowling that teaches delivery, scoring, and rules. The class is conducted as an instructional league. This course may be repeated three times. (12/07)

TEAM ACTIVITY

PHED-12A BASEBALL  
1 unit: 3 hours lab.  
Prerequisite/Advisory: None.  
This is a course designed to teach fundamentals of baseball. Batting, throwing, catching, base running, team play, rules, and strategy will be covered in the class. Team competition is also included. This course may be repeated three times. (9/99)

PHED-12B BASKETBALL  
1 unit: 3 hours lab.  
Prerequisite/Advisory: None.  
This course offers the student the opportunity to develop and improve fundamental skills involved in basketball, such as, ball handling, shooting, defensive and offensive tactics, and physical endurance. It also covers team strategy and play. Rules, strategy, and sportsmanship are also stressed. This class may be repeated three times. (5/10)

PHED-12C FOOTBALL  
1 unit: 3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.  
This course offers the student opportunity to develop and improve the fundamental skills involved in football, such as, passing, receiving, kicking, blocking (with the aid of blocking dummies), team play, and strategy. Rules and class competition will also be included. This course may be repeated three times. (3/08)
PHED-12D  SOCCER
1 unit: 3 hours lab.
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.
This is a course designed to present basic fundamentals, tactics, and techniques of soccer with emphasis on learning through playing. Rules, strategy, and class competition will be included. This course may be repeated three times. (12/07)

PHED-12E  VOLLEYBALL
1 unit: 3 hours lab.
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.
The course begins with basic skills and court positions necessary to enjoy the sport. Intermediate and advanced skills and court positions are introduced as the level of ability of the class will allow, with classes progressing to playing multiple offenses. Each class session begins with warm-up exercises and "dry-land" drills. The skill period ends with class participation in a volleyball match. This course may be repeated three times. (2/08)

PHED-12F  RECREATION VOLLEYBALL
1 unit: 3 hours lab.
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.
Recreation volleyball is designed to develop, through participation in team play, the basic skills and strategy of the sport. History, rules, officiating, and etiquette will be included. This course may be repeated three times. (2/08)

PHED-12G  INTRAMURAL ACTIVITIES
0.5 unit: 1.5 hours lab.
Prerequisite/Advisory: None.
This course is designed to allow all students opportunity to engage in a variety of competitive sports and activities in an intramural environment. This course may be repeated three times. (9/99)

PHED-12H  SOFTBALL
1 unit: 3 hours lab.
Prerequisite/Advisory: None.
This is a course designed to teach fundamentals of softball. Batting, throwing, catching, base running, team play, rules, and strategy will be covered. Team competition is also included. This course may be repeated three times. (9/99)

AQUATICS

PHED-13A  BEGINNING SWIMMING
.5-1 unit: 1.5-3 hours lab.
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.
This is an introductory course for non-swimmers or those with limited skills in swimming. Basic swimming strokes taught will be the crawl, back crawl, elementary backstroke, breaststroke, basic front dive, underwater swimming, and other related aquatic skills. May be repeated three times. (12/07)

PHED-13B  LIFEGUARD TRAINING
2 units: 1.5 hours lecture, 1.5 hours lab.
Limitation on Enrollment: Students must pass the American Red Cross Swimming requirement. Advisory: PHED-13H.
This course teaches theory and analysis of advanced swimming skills, instruction and certification in lifesaving, Title 22 (First Aid), and cardiovascular resuscitation. A course recommended for anyone who wishes to become a lifeguard, it may be repeated one time. (4/05)

PHED-13C  WATER CALISTHENICS
.5-1 unit: 1.5-3 hours lab.
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.
This course will include isometric calisthenics and aerobic types of exercise performed in water to increase one's strength, flexibility, and cardiovascular fitness. No swimming skills are required, as exercises are done in waist-to-chest-deep water. Water games, relays, and music will add further interest to the exercising. Both swimmer and non-swimmer will benefit from this class. This course may be repeated three times. (12/07)

PHED-13D  FITNESS THROUGH AQUATICS
1 unit: 3 hours lab.
Advisory: PHED-13A.
The course is a personal fitness program designed to use swimming as a method to reach a desired level of cardiovascular fitness. May be repeated three times. (5/07)

PHED-13E  WATER SAFETY INSTRUCTION
2 units: 1.5 hours lecture, 1.5 hours lab.
Prerequisites: PHED-13B or PHED-13H.
This course is designed to certify students who complete all required work as certified Red Cross swimming instructor. It includes instruction in teaching techniques, stroke analysis, skilled swimming, class organization, and pool safety. There will be practice teaching assignments with peers and a practical and written final. This course is offered during spring semester only. (12/06)

PHED-13F  DIVING
.5-1 unit: 1.5-3 hours lab.
Advisory: PHED-13A.
Basic techniques of diving are presented in this course, which includes approach, position, and form of water entry for front, reverse, inward and twisting dives. This course may be repeated three times. (12/06)

PHED-13G  WATER POLO
.5-1 unit: 1.5-3 hours lab.
Advisory: PHED-13A.
The course will include review of fundamental swimming strokes and skills. Additional strokes taught will include the butterfly, inverted breaststroke, overarm sidestroke, and trudgen strokes. Also included in the course will be shallow dives, flip turns, treading water, and underwater skills. This course may be repeated three times. (4/05)

PHED-13H  SWIMMING SKILLS
1 unit: 0.5 hour lecture: 1.5 hours lab.
Advisory: PHED-13A.
The course will include review of fundamental swimming strokes and skills. Additional strokes taught will include the butterfly, inverted breaststroke, overarm sidestroke, and trudgen strokes. Also included in the course will be shallow dives, flip turns, treading water, and underwater skills. This course may be repeated three times. (4/05)

DANCE

PHED-14A  DANCE CHOREOGRAPHY
1 unit: 0.5 hour lecture, 1.5 hours lab.
Prerequisite/Advisory: None.
This is a course teaching the student of dance how to use "language of the body" to communicate an idea, theme, or story. Utilizing time, space, and energy, the student learns to conceive, develop, and put movements together. May be repeated three times.

PHED-14B  MODERN DANCE
1 unit: 0.5 hour lecture, 1.5 hours lab.
Prerequisite/Advisory: None.
This is a course teaching the student of dance how to use "language of the body" to communicate an idea, theme, or story. Utilizing time, space, and energy, the student learns to conceive, develop, and put movements together. May be repeated three times.

PHED-14C  BALLET
1 unit: 0.5 hour lecture, 1.5 hours lab.
Prerequisite/Advisory: None.
This is a course designed to teach the basic steps and skills of ballet. Students will have the opportunity to learn and perform routines. History and terminology will also be covered. May be repeated three times.
PHED-14D1  BEGINNING JAZZ DANCE (Also: DNCE-14D1)  
1 unit: 0.5 hour lecture, 1.5 hours lab.  
Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.  
This is a course designed to introduce the basic techniques, rhythms, and combinations of jazz movement. The class will include stretching exercises, coordination exercises, and general body conditioning exercises. This course may not be repeated. (3/06)

PHED-14D2  INTERMEDIATE JAZZ DANCE (Also: DNCE-14D2)  
1 unit: 0.5 hour lecture, 1.5 hours lab.  
Prerequisite: DNCE-14D1 or PHED-14D1. Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.  
Students will be introduced to intermediate dance techniques. Basic skills will be reviewed along with an emphasis on conditioning and flexibility. Additional technical study includes double pirouettes, chaîne and piqué turns. Students will be required to develop and perform short routines in class. This course may not be repeated. (3/06)

PHED-14D3  ADVANCED JAZZ DANCE (Also: DNCE-14D3)  
1 unit: 0.5 hour lecture, 1.5 hours lab.  
Prerequisite: DNCE-14D2 or PHED-14D2. Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.  
This course emphasizes advanced conditioning, control, stage presence and dance quality performances. Students must be available for rehearsal and performances of productions to which they may be assigned. This course may not be repeated. (3/06)

ADAPTIVES

PHED-15  ADAPTED PHYSICAL EDUCATION  
1 unit: 3 hours lab.  
Advisory: Good general health; absence of medical conditions that would prevent planned physical activity. Advise that student provide medical verification of disability and recommendation of medical intervention.  
Adapted Physical Education provides individual instruction for the physically disabled student or other students requiring individual approaches to health-related fitness activities. Students will engage in health-building activities designed to create self confidence, enhanced self image, and physical independence. May be repeated three times. (5/08)

THEORY AND PRACTICUM

PHED-20  INTRODUCTION TO PHYSICAL EDUCATION AND EXERCISE SCIENCE  
3 units: 3 hours lecture.  
Advisory: ENGL-85.  
This is a survey class designed to introduce the professional foundations of physical education and exercise science. The course includes historical and philosophic development of physical education. This course will also acquaint the student with current issues, qualifications, and opportunities in the field. (1/05)

PHED-31  TECHNIQUES OF SPORTS OFFICIATING  
2 units: 1 hour lecture, 3 hours lab.  
Advisory: ENGL-85.  
This is a course designed to provide the individual with knowledge, rules, skills, methods, and techniques of officiating football, volleyball, and basketball. Emphasis will be attaining practical experience in a classroom situation while laboratory hours by arrangement will include officiating competitive events such as physical education games, intramural, junior high school games and recreational games. (12/06)

PHED-32  TECHNIQUES OF SPORTS OFFICIATING  
2 units: 1 hour lecture, 3 hours lab.  
Advisory: ENGL-85.  
This is a course designed to provide the individual with knowledge, rules, skills, methods, and techniques of officiating track and field, baseball and softball. Emphasis will be on attaining practical experience in a classroom situation while laboratory hours by arrangement will include officiating competitive events such as physical education games, intramural, junior high school games and recreational games. (12/06)

PHED-36A  THEORY AND ANALYSIS OF FOOTBALL  
1 unit: 1 hour lecture.  
Advisory: ENGL-85.  
This course presents the fundamental knowledge of football through lecture and discussions. This course is recommended for physical education, recreation, and recreation-aide majors and varsity football players. This course may be repeated once. (12/06)

PHED-36B  THEORY AND ANALYSIS OF BASKETBALL  
1 unit: 1 hour lecture.  
Advisory: ENGL-85.  
This course presents the fundamental knowledge of basketball through techniques of lecture, discussions, and video analysis. This course is recommended for physical education, recreation, and recreation-aide majors and varsity basketball players. (12/06)

PHED-36C  THEORY AND ANALYSIS OF BASEBALL  
1 unit: 1 hour lecture.  
Advisory: ENGL-85.  
This course presents the fundamental knowledge of baseball through techniques of lecture, discussions, and video analysis. This course is recommended for physical education, recreation, and recreation-aide majors and varsity baseball players. (12/06)

PHED-36D  THEORY AND ANALYSIS OF TRACK AND FIELD  
1 unit: 1 hour lecture.  
Advisory: ENGL-85.  
This course presents the fundamental knowledge of track and field through techniques of lecture, discussions, and video analysis. (12/06)

PHED-70L5  SPECIAL TOPICS IN WATER EXERCISE  
1 unit: 3 hours lab.  
Prerequisite/Advisory: None.  
This course uses water exercises as a means to improve strength, flexibility, and cardiovascular fitness. Swimmers and non-swimmers may take the course. This course may be repeated three times. (3/00)

PHED-70L6  SPECIAL TOPICS IN PHYSICAL EDUCATION LAB  
1 unit: 3 hours lab.  
Prerequisite/Advisory: None.  
This is a course teaching a variety of special topics in physical education which have current interest to students. This course may be repeated three times. (3/00)

PHED-90  ADAPTIVE PE  
1 unit: 3 hours lab.  
Prerequisite/Advisory: None.  
This course is a continuing program of individualized instruction for the physically disabled student, allowing that student long-range participation in an adapted exercise physiology environment designed to create more physical independence for the student. May be repeated three times. (5/97)
Physical Science
Math, Science and Engineering

DEGREE
A.A. - Physical Science

DEGREE
A.A. - Physical Science (19600.AA)

To earn an Associate in Arts Degree in Physical Science it is expected that a student will have completed math through a pre-calculus course (the courses at Merced College that will satisfy that requirement are MATH-02, or MATH-25 and MATH-26). The student must complete the basic graduation requirements (BIOL-01 or BIOL-04A or BIOL-04AH are recommended for science breadth) and the courses listed below.

Program Student Learning Outcomes
A. Student will be able to draw qualitative conclusions as to the type of reaction, type of bonds,
B. A student will be able to solve using the appropriate mathematical method.
C. A student will learn the physical properties, scale, and motions of the stars, planets and universe.
D. The student will answer questions on exams, and perform lab exercises.

Units
CHEM-02A Introductory Chemistry ..............................................4
or
CHEM-04A General Chemistry ...................................................5
GEOL-01 Physical Geology ......................................................4
PHYS-02A General Physics .......................................................4

Plus select six units from the following:
ARCH-01 Introduction to Archaeology .......................................3
ASTR-01 Principles of Astronomy .............................................3
CHEM-04B General Chemistry ....................................................5
GEOG-01 Physical Geography ..................................................3
GEOL-02 Historical Geology ....................................................4
PHYS-02B General Physics .......................................................4

18

PHYSICAL SCIENCE (PHSC)

PHSC-01 INTRODUCTION TO PHYSICAL AND EARTH SCIENCE
(CSU breadth area B1) (IGETC area 5A)
3 units: 3 hours lecture.
Advisories: ENGL-85; MATH-81 or MATH-B.
This is an introductory course presenting the nature of physical, earth, and space sciences and their relationship to other areas of scientific knowledge. The course will develop the major concepts and give an understanding of the general principles of physical, earth, and space science. As an introductory class, the course of study will focus on major principles and applications to modern observations and phenomena. This course is designed to meet the content requirement for physical science and for earth and space science for the Liberal Studies - Elementary Teaching preparation pathway. (12/04)

PHSC-01L INTRODUCTION TO PHYSICAL AND EARTH SCIENCE LABORATORY
(CSU breadth areas B1/B3) (IGETC area 5A)
1 unit: 3 hours lab.
One-way corequisite: PHSC-01. Advisories: ENGL-85; MATH-81 or MATH-B.
This introductory laboratory is designed to provide hands-on exploration in parallel with topics covered in the lecture course, PHSC-01. Emphasis will be placed on 1) classical science experimentation, 2) laboratory activities in the real world, and 3) support of the laboratory activities through use of modern technologies. Students planning on becoming K-12 teachers will find materials applicable to their future profession. (3/05)

Recommended Sequence: A.A. - Physical Science (19600.AA)

Fall 1
CHEM-02A Introductory Chemistry ..............................................4
GEOL-01 Physical Geology .......................................................4
Additional units can be taken as breadth and/or elective courses.

Spring 1
PHYS-02A General Physics .......................................................4
Additional units can be taken as breadth and/or elective courses.

Fall 2
Additional units can be taken as breadth and/or elective courses.

Spring 2
Additional units can be taken as breadth and/or elective courses.
DEGREE
A.S. - Physics

Program Description
The following curriculum is designed for students planning to transfer to a four-year university. Students should check the specific requirements of their intended transfer school and work with his/her counselor.

DEGREE
A.S. - Physics (19700.AS)

For an Associate in Science Degree in Physics, students must meet the graduation requirements and complete the 33-unit curriculum listed below. The courses listed below must be in addition to the basic graduation requirements. (PHYS-04A and a life science course are recommended to satisfy science breadth.)

Program Student Learning Outcomes
A. Given a variety of physics or physical problems from college physics to engineering physics a student will be able to solve using appropriate physics/physical/mathematical principles and express their answer in appropriate form.
B. Given a physical situation, a student will be able to determine the nature of and the causal relationships to the situation and use appropriate tools and technology to analyze and measure the behavior.
C. During the course of the program the student will be able to communicate their knowledge of physics principles in oral and written form using the language of physics.
D. Given a physical situation the student will be able to predict the properties, outcome, and mathematical or physical result of a physical situation.
E. Given a physical situation the student will be able to construct an experiment to test the behavior of a system.
F. Given physics as a central science the student will be able to identify applications to other scientific, technological, or societal areas.

Recommended Sequence: A.S. - Physics (19700.AS)

Fall 1
CPSC-01 Introduction to Management Information Systems... 4
MATH-04A Calculus I .......................................................... 4
Additional units can be taken as breadth and/or elective courses.

Spring 1
MATH-04B Calculus II .......................................................... 4
MATH-12 FORTRAN Programming .................................. 3
PHYS-04A Physics................................................................. 4
Additional units can be taken as breadth and/or elective courses.

Fall 2
MATH-04C Multivariable Calculus ...................................... 4
MATH-08 Linear Algebra ..................................................... 3
PHYS-04B Physics................................................................. 4
Additional units can be taken as breadth and/or elective courses.

Spring 2
MATH-06 Elementary Differential Equations ..................... 3
PHYS-04C Physics................................................................. 4
Additional units can be taken as breadth and/or elective courses.

PHYSICS (PHYS)

PHYS-02A GENERAL PHYSICS
(CSU breadth area B1/B3) (IGETC area 5A)
4 units: 3 hours lecture, 3 hours lab.
Prerequisite: MATH-02, or MATH-25 and MATH-26. Advisory: ENGL-85.
This course is intended for students other than physics and engineering majors. PHYS-02A is the first semester of a one-year physics course designed to develop major concepts and give an understanding of general principles of physics. This course will also try to relate physics to other areas of knowledge and discuss science in general, and physics specifically, as part of the concept of culture and time. The development of ideas will begin with those of Aristotle and terminate with present-day concepts of the atom and nucleus. PHYS-02A will emphasize the universe, motion, forces in nature, energy, fields, conservation laws, waves, sound, light, and thermal phenomena. (1/07)

PHYS-02B GENERAL PHYSICS
(CSU breadth area B1/B3) (IGETC area 5A)
4 units: 3 hours lecture, 3 hours lab.
Prerequisite: PHYS-02A. Advisory: ENGL-85.
PHYS-02B is a continuation of PHYS-02A with emphasis on electricity, magnetism, radiation, relativity, atomic and nuclear processes, astrophysics, cosmology, and a look toward the future. (1/07)

PHYS-04A PHYSICS
(CSU breadth area B1/B3) (IGETC area 5A)
4 units: 3 hours lecture, 3 hours lab.
Prerequisite: MATH-04A. One-way corequisite: MATH-04B. Advisory: ENGL-85.
This course is a calculus-based physics course intended for physics and engineering majors as well as some chemistry and math majors. PHYS-04A is the first semester of a three-semester sequence intended to give a technical introduction to physics with emphasis on concepts and principles of physics and problem-solving. PHYS-04A includes the areas of mechanics, wave motion, fluids, and thermal phenomena. (1/07)
PHYS-04B PHYSICS
(CSU breadth area B1/B3) (IGETC area 5A)
4 units: 3 hours lecture, 3 hours lab.
Prerequisites: MATH-04B; PHYS-04A. One-way corequisite: MATH-04C. Advisory: ENGL-85.
PHYS-04B is a continuation of PHYS-04A with emphasis on the areas of electricity, magnetism, and light. (1/07)

PHYS-04C PHYSICS
(CSU breadth area B1/B3) (IGETC area 5A)
4 units: 3 hours lecture, 3 hours lab.
Prerequisite: PHYS-04B. Advisory: ENGL-85.
PHYS-04C is a continuation of PHYS-04B. It emphasizes the laws of thermodynamics, relativity, and topics of modern physics. (1/07)

PHYS-10 CONCEPTS IN PHYSICS
(CSU breadth area B1) (IGETC area 5A)
3 units: 3 hours lecture.
Advisories: ENGL-85; MATH-81 or MATH-B.
This course is a survey of major concepts covered in physics. The concepts, as well as the understanding of general principles, will be developed through lecture, demonstrations, and discussion of everyday phenomena. Both classical and modern topics will be covered, to include mechanics, properties of matter, heat, sound, electricity, magnetism, light, atomic and nuclear physics, relativity, and astrophysics. This course provides an opportunity to work with the concepts of physics in a qualitative manner. (1/07)
Political Science
Social Sciences, Humanities, and Fine Arts

POLITICAL SCIENCE (POSC)

POSC-01 ESSENTIALS OF AMERICAN POLITICAL SYSTEM
(CSU breadth area D8/F2) (IGETC area 4H)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course will introduce students to institutions of American national government, the American political system, and California state and local government. The course includes a study of the United States Constitution and its application to federal, state, and local government. Emphasis is placed upon various roles of national and state government, constitutional rights and obligations of citizens, and the evolution and development of California state political institutions. This course meets the United States Constitution requirement and the federal, California state, and local government requirement. (10/09)

POSC-02 AN INTRODUCTION TO WORLD POLITICAL SYSTEMS
(CSU breadth area D8) (IGETC area 4H)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is a comparative study of the theory, history, structure, and application of the governmental systems of major European nations, as well as non-European countries. Emphasis will be placed on the governments of England, France, Germany, Russia, and Japan. (2/06)
Psychology
Social Sciences, Humanities, and Fine Arts

DEGREE
A.A. - Psychology
A.A.-T. - Psychology

Program Description
The Department of Psychology at Merced College offers students an exciting and challenging curriculum. The curriculum provides students with an opportunity to gain an understanding of how psychological research and theory can be applied to daily life experiences. Students also gain insight into the behavior and personality of themselves and others. The primary goals of the Department of Psychology are (1) to enable students to achieve their educational goals; (2) to teach students about the various theories and approaches to the scientific study of human and animal behavior; (3) to help students utilize critical thinking skills when examining questions and issues; and (4) to better serve the community as informed and concerned citizens who understand the importance of diversity and inclusion.

The focus of the Psychology Department is to serve students with a wide range of educational and career goals. To this end, the Psychology Department offers two degrees: The Associate in Arts in Psychology for Transfer (AA-T) and the Associate in Arts in Psychology (AA). For students who are planning on transferring, the AA-T enables them to transfer by successfully completing at least 60 transferable units that will include the psychology major courses, and CSU Breadth or IGETC certification. Students who earn the AA-T in Psychology will be granted junior status at a CSU and will be given priority admission to the psychology program. For students who are not planning on transferring, but who want to earn a degree, the Associate of Arts (AA) in Psychology degree is available. This degree provides students with great flexibility in designing their educational plan. Students who benefit from the AA option include students whose career choice requires only an AA degree, as well as students who are returning to school to earn a degree for advancement at a current job and are not planning to transfer.

Career Opportunities in Psychology
The AA degree in psychology prepares students for a variety of jobs that require an AA degree. The AA in psychology is valuable for jobs that require an understanding of human behavior, interpersonal skills, critical thinking, and cultural diversity. The AA-T degree is designed for students who plan to transfer to a 4 year college or university, but also prepares students for careers in a variety of fields that require an understanding of human behavior.

DEGREE (4/11)
A.A. - Psychology (20500.AA)

The Associate in Arts Degree in Psychology is designed for students who are interested in learning more about psychology, but not planning on transferring. Students who are planning on transferring to a California State University should consider the Associate in Arts in Psychology for Transfer degree (AA-T). Students should discuss these options with their counselors.

For this degree, students must complete the 18-unit curriculum listed below. These courses must be in addition to the basic graduation requirements (see catalog for information about the requirements including PE and Computer and Information Literacy).

Important note: Students who complete this degree will not be granted priority admission to a CSU at junior status. Students who are planning on transferring should complete the AA-T (Associate in Arts in Psychology for Transfer).

Program Student Learning Outcomes
A. Analyze the major theoretical explanations of behavior in the field of psychology.
B. Appraise the applications of psychology.
C. Develop an understanding of the applications of psychology by demonstrating knowledge of the impact of healthy lifestyles and personal choices on psychological wellbeing.
D. Evaluate the credibility of a claim by differentiating empirical evidence from supposition.

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<thead>
<tr>
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<th>Units</th>
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<tbody>
<tr>
<td>PSYC-01A</td>
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<tr>
<td>or PSYC-01AH</td>
<td></td>
</tr>
<tr>
<td>Plus 15 units from the following electives:</td>
<td></td>
</tr>
<tr>
<td>ANTH-02</td>
<td>3</td>
</tr>
<tr>
<td>BIOL-01</td>
<td>4</td>
</tr>
<tr>
<td>MATH-10</td>
<td>3</td>
</tr>
<tr>
<td>or PSYC-05</td>
<td></td>
</tr>
<tr>
<td>PSYC-01B</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-09</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-15</td>
<td>3</td>
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<tr>
<td>PSYC-20</td>
<td>3</td>
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<tr>
<td>PSYC-22</td>
<td>3</td>
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<tr>
<td>PSYC-23</td>
<td>3</td>
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<td>PSYC-25</td>
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<td>PSYC-35</td>
<td>3</td>
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<td>PSYC-36</td>
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<tr>
<td>PSYC-49A-ZZ</td>
<td>3</td>
</tr>
<tr>
<td>SOC-01</td>
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</tr>
</tbody>
</table>

18
### A.A.T. - Psychology (20500.AAT)

The Associate in Arts in Psychology for Transfer degree is designed for students planning on transferring to a California State University. Upon completion of the transfer associate degree, the student is eligible for transfer with junior standing into the California State University (CSU) system. Students will be given priority consideration when applying to a particular program that is similar to the student’s community college area of emphasis.

For an Associate in Arts in Psychology for Transfer (AA-T), students must complete 60 semester units that are eligible for transfer to the California State University with a minimum grade point average of 2.0, including both of the following:

1. Certification of the Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education-Breadth Requirements.
2. A minimum of 19 semester units from the list below.

Important note: Students are not required to complete any additional local graduation requirements for the AA-T (e.g., PE and Computer and Information Literacy courses).

#### Program Student Learning Outcomes

A. Analyze the major theoretical explanations of behavior in the field of psychology.
B. Appraise the applications of psychology.
C. Critically evaluate statistical analyses, and the claims supported by them.
D. Display effective writing skills using APA format.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>PSYC-01A</td>
<td>Introduction to Psychology</td>
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</tr>
<tr>
<td>or PSYC-01AH</td>
<td>Honors Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-01B</td>
<td>Introduction to Psychological Methods</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-05</td>
<td>Introduction to Statistics in Psychology</td>
<td>3</td>
</tr>
<tr>
<td>MATH-10</td>
<td>Elementary Statistics</td>
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**LIST A**

Select one of the following courses:  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL-01</td>
<td>General Biology for Non-Majors</td>
<td>4</td>
</tr>
<tr>
<td>BIOL-02</td>
<td>Human Biology</td>
<td>4</td>
</tr>
</tbody>
</table>

**LIST B**

Select one of the following courses:  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANTH-02</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-09</td>
<td>Human Development</td>
<td>3</td>
</tr>
<tr>
<td>SOC-01</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
</tbody>
</table>

**LIST C**

Select one of the following courses:  

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC-15</td>
<td>Biological Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-20</td>
<td>Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-22</td>
<td>Human Sexuality</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-23</td>
<td>Personal &amp; Social Adjustment</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-25</td>
<td>Abnormal Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-35</td>
<td>Developmental Psychology: Childhood</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-36</td>
<td>Developmental Psychology: Adolescence</td>
<td>3</td>
</tr>
<tr>
<td>PSYC-49A-ZZ</td>
<td>Special Topics in Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

Total units toward the major ................................................. 19

Additional courses toward CSU Breadth or IGETC certification and transferable electives: ................................................. 41

Total Units ............................................................................. 60
PSYC-15 BIOLOGICAL PSYCHOLOGY
(CSU breadth area D9) (IGETC area 4I)
3 Units: 3 hours lecture.
Advisory: ENGL-85.
An introduction to the scientific study of the biological bases for human thought and behavior. Topics include basic neuroanatomy and neurophysiology, research methods in biological psychology, the autonomic and peripheral nervous system; and the physiological mechanisms underlying sensation, perception, consciousness, motivation, emotion, learning, memory, and psychological disorders. (1/07)

PSYC-20 SOCIAL PSYCHOLOGY
(CSU breadth area D9) (IGETC area 4I)
3 Units: 3 hours lecture.
Advisory: ENGL-85.
This course analyzes human behavior in relation to the social environment. Topics include aggression, prejudice, attraction, altruism, attitude change, conformity, gender roles, cultural norms, person perception, obedience, and social cognition. Emphasis will be placed on the application of the scientific method and research strategies in social psychology. (1/07)

PSYC-22 HUMAN SEXUALITY
(CSU breadth area D9/E) (IGETC area 4I)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course explores the psychology of human sexuality. Biological, psychosocial, and sociocultural research is presented concerning all aspects of human sexuality in contemporary society. Specific topics include sexual anatomy and physiology, gender, sexual orientations, contraception, sexually transmitted infections, sexual dysfunction and sex for sale. (10/10)

PSYC-23 PERSONAL AND SOCIAL ADJUSTMENT
(CSU breadth area D9/E) (IGETC area 4I)
3 units: 3 hours lecture.
Advisory: ENGL-85.
PSYC-23 is a course which examines personality factors as they relate to problems of growth and adjustment. Concepts covered in the course are personality development, psychological bases of behavior, mental health, and interpersonal relations. Stress is placed on the importance of applying therapeutic principles and techniques in everyday life. (2/09)

PSYC-25 ABNORMAL PSYCHOLOGY
(CSU breadth area D9) (IGETC area 4I)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is designed to provide the student with an understanding of abnormal behavior as delineated in the "Diagnostic and Statistical Manual of Mental Disorders." Topics include classifications, clinical pictures, causal factors, treatment, and outcomes of maladaptive behavior. Special emphasis will be placed on assessment, therapy, and prevention of maladaptive behavior. (1/07)

PSYC-33 WORKING EFFECTIVELY WITH FAMILIES (Also: CLDV-33 and SOC-33)
1 unit: 1 hour lecture.
Advisory: ENGL-85.
This is a course designed to teach students how to work with parents in school settings. Students will examine current ways of parent involvement, parent rights and responsibilities, and ways of keeping parents informed. (11/05)

PSYC-35 DEVELOPMENTAL PSYCHOLOGY: CHILDLHOOD
(CSU breadth area D9/E) (IGETC area 4I)
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course is a study of human development from conception to adolescence. The focus is on major theories and psychological research relating to the physical, cognitive, and psychosocial aspects of development during childhood, with an emphasis on the influence of culture. (1/07)
Radiologic Technology
Allied Health, Business, and Public Safety

DEGREE
A.S. - Diagnostic Radiologic Technology

CERTIFICATE
Diagnostic Radiologic Technology

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

Web site
www.mccd.edu/alliedhealth/

Program Description
The Diagnostic Radiologic Technology Program is a full-time Associate Degree and Certificate of Achievement program to which a minimum of 18 students are admitted each fall semester. The entire program is 29 consecutive months in length and is composed of five semesters and two twelve-week summer sessions. Students wishing to enter the program must make formal application, including verification of completion of program prerequisites. Upon verification that all prerequisites have been met, the applicant will be placed on a waiting list. Prerequisites completed more than ten years ago are subject to evaluation, and repetition of course work may be required when deemed appropriate. Applications are accepted year-round.

Mission Statement
The mission of the Merced College Diagnostic Radiologic Technology Program is to prepare our students for careers as diagnostic radiographers by providing a continually-improving educational program which is accredited by the *JRCERT and by instilling in our students a commitment to continued professional growth and lifelong learning.

*JRCERT-Joint Review Committee on Education in Radiologic Technology; 20 N. Wacker Dr, Suite 2850; Chicago, IL 60606-3182; www.jrcert.org

Requirements for Application (program prerequisites)
ALLH-67, BIOL-16, CHEM-02A, ENGL-01A, MATH-C, and RADT-50. All prerequisites and program requirements must be passed with a grade of “C” or better, and their combined GPA must be 2.35 or higher.

Program requirements must be satisfied prior to submitting an application to the program. An official transcript listing all program prerequisites must accompany an application before the application will be officially accepted. Applications are accepted year-round. For additional program information and application forms, refer to the Diagnostic Radiologic Technology Handbook available at the Merced College Bookstore, or visit the RADT program web site and download the forms at: www.mccd.edu/alliedhealth/DRT/radtechhp.htm. See an Allied Health Counselor for further clarification.

Upon admission to the program, students are required to have a physical examination providing evidence of good health and immunizations, and must provide annual proof of a flu shot and a negative TB skin test OR an annual TB screening and a chest x-ray at least every four years. Students will also have to supply a criminal background clearance upon admission to the program. A negative criminal background clearance may deny the student’s eligibility to sit for the ARRT national exam. If you are unsure about your eligibility status, the ARRT has an exam pre-clearance process that will help identify your eligibility to sit for this exam prior to beginning or completing the program. It is recommended that you request this evaluation as soon as possible so that your ability to sit for the ARRT exam is not jeopardized. Further information can be found at www.ARRT.org.

Also upon admission, additional information on uniforms will be provided. While enrolled in the program, students will be assigned to various clinical facilities in addition to the on-campus portions of the program. This ensures the strongest educational experience for each student. By application and acceptance into this program, the student agrees to accept clinical assignments in whichever hospital or clinical site the student is assigned within our 75 mile service area. During internship, clinical assignments may include day, evening, and weekend hours.

Career Opportunities
Licensure/certification as a Radiographer provides for employment opportunities primarily in hospitals, clinics, imaging centers, and doctors offices. Employment opportunities for Radiographers are expected to remain satisfactory. With experience and/or additional education, graduates can work in the following areas:
- Radiology Department Administration
- Hospital Administration
• Radiography Education

Associated fields:
• Computerized Tomography Sonography
• Magnetic Resonance Imaging
• Digital Vascular Imaging
• Cardiovascular Technology
• Radiation Oncology
• Nuclear Medicine
• Equipment Sales/Service
• Technical Representative.

Highlights
The Allied Health Center houses a large computer lab, conference rooms, study rooms and multiple small and large classrooms. The Diagnostic Radiologic Technology Program has two computerized radiography x-ray suites and a PACS system that provides students hands-on experience with state-of-the-art equipment.

Note to Transfer Students
Schedule an appointment with an Allied Health Counselor to discuss any questions concerning prerequisite or A.S. Degree coursework.

Advisement
The Diagnostic Radiologic Technology Program is a demanding full-time program. Some students may find it difficult to work while attending. Students are also expected to complete intense homework assignments.

In order to progress satisfactorily in the RADT program, students must complete Diagnostic Radiologic Technology courses in the specified sequence with a minimum grade of “C” in each course, and maintain an overall G.P.A. of 2.35 in supportive and RADT course work.

DEGREE (12/06)
A.S. - Diagnostic Radiologic Technology
(12700.AS)

A.S. Degree breadth requirements and the below listed courses must be completed by the end of the fourth session (i.e., Third Semester - Fall), at which time an Associate in Science Degree in Diagnostic Radiologic Technology is awarded.

Program Student Learning Objectives
A. Employ the principles of radiation protection measures
B. Demonstrate entry level clinical competency
C. Distinguish between correct and incorrect answers on practice national exam questions
D. Demonstrate effective communication skills
E. Demonstrate critical thinking skills
F. Demonstrate an appreciation of life-long learning
G. Evaluate and adhere to the ethical and compassionate treatment of patients

Required:

<table>
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<tr>
<th>Units</th>
<th>First Semester (Fall)</th>
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<tbody>
<tr>
<td>4</td>
<td>RADT-41 Introduction to Medical Imaging</td>
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<td>4</td>
<td>RADT-42 Radiologic Procedures I</td>
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<th>First Summer Session</th>
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The internship portion of the RADT Program commences with:

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<th>Units</th>
<th>Fourth Semester (Spring)</th>
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<tbody>
<tr>
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<td>RADT-67A Advanced Radiologic Procedures II</td>
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<td>10</td>
<td>RADT-67B Advanced Clinical Education I</td>
</tr>
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<td>RADT-67D Fluoroscopy</td>
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<th>Second Summer Session</th>
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<th>Fifth Semester (Fall)</th>
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CERTIFICATE
Diagnostic Radiologic Technology
(12700.CF)

Students successfully completing the courses listed below are awarded a Certificate of Achievement in Diagnostic Radiologic Technology.

Program Student Learning Outcomes
A. Employ the principles of radiation protection measures
B. Demonstrate effective communication skills
C. Demonstrate critical thinking skills
D. Demonstrate an appreciation of life-long learning
E. Evaluate and adhere to the ethical and compassionate treatment of patients

Units
First Semester (Fall)
RADT-41 Introduction to Medical Imaging ........................................ 4
RADT-42 Radiologic Procedures I ...................................................... 4

Second Semester (Spring)
RADT-40 Radiologic Science I ......................................................... 3
RADT-43A Radiologic Procedures II ................................................. 4
RADT-43B Clinical Education I ....................................................... 5

First Summer Session
RADT-44A Radiologic Science II .................................................... 2
RADT-44B Clinical Education II ..................................................... 3.5

Third Semester (Fall)
RADT-45A Radiologic Procedures III ............................................. 1
RADT-45B Clinical Education III .................................................... 5.5
RADT-45C Advanced Radiologic Procedures I ................................. 2
RADT-45D Radiologic Pathology .................................................... 1.5

Fourth Semester (Spring)
RADT-67A Advanced Radiologic Procedures II ................................. 2
RADT-67B Advanced Clinical Education I ....................................... 10
RADT-67D Fluoroscopy ............................................................. 2

Second Summer Session
RADT-68A Radiologic Science III .................................................... 2
RADT-68B Advanced Clinical Education II ...................................... 7

Fifth Semester (Fall)
RADT-69A Integrative Study In Radiography ..................................... 2
RADT-69B Advanced Clinical Education III .................................... 9
RADT-69C Sectional Anatomy ....................................................... 1
RADT-69D Principles of Venipuncture ........................................... 0.5

American Registry of Radiologic Technologist (ARRT) Examination for Radiography
Upon successful completion of the Associate in Science Degree AND Certificate of Achievement in Diagnostic Radiologic Technology, graduates are eligible to write the American Registry of Radiologic Technologist (ARRT) Examination for Radiography, and, if successful, to obtain the credentials necessary for employment in the field.
RADT-43B  CLINICAL EDUCATION I
[CILC Area B, C, F]
5 units: 15 hours lab (270 total hours).
Limitation on enrollment: Enrollment in Radiography Program. One-way corequisite: RADT-43A.
This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, patient information management, work efficiency and image evaluation is provided. This course is part of the third semester of a twenty-nine month program in Diagnostic Radiologic Technology and is only offered during fall semester. (12/05)

RADT-44A  RADIOLOGIC SCIENCE II
2 units: 27 total hours lecture, 27 total hours lab.
Limitation on enrollment: Enrollment in the Radiography Program.
This course covers the theory and application of factors that govern and influence the production of the radiographic image. The evaluation of radiographic systems to assure consistency in the production of quality images will also be introduced. The laboratory component of this course will provide "live lab" experience conducting radiation exposure experiments that demonstrate clinical applications of the theoretical principles and concepts presented. A review of radiographic procedures, anatomy, and film critique will also be presented. This course is part of the first summer session of a twenty-nine month program in Radiography and is only offered during summer session which runs approximately 12 weeks. (12/05)

RADT-44B  CLINICAL EDUCATION II
[CILC Area B, C, F]
3.5 units: 189 total hours lab.
Limitation on enrollment: Enrollment in the Radiography Program.
This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic coursework. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, patient information management, work efficiency and image evaluation is provided. This course is part of the first summer session of a twenty-nine month program in Radiography and is only offered during summer session which runs approximately 12 weeks in duration. (12/05)

RADT-45A  RADIOLOGIC PROCEDURES III
1 units: .50 hours lecture, 1.5 hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Radiologic Technology Program.
This course is designed to provide a knowledge base necessary to perform standard radiographic procedures of the cranial, facial bones and paranasal sinuses. The laboratory portion of this course will include positioning exercises and film evaluation of these areas to achieve both accuracy and speed. This course is part of the third semester of a twenty-nine month program in Radiography and is only offered during fall semester. (2/08)

RADT-45B  CLINICAL EDUCATION III
[CILC Area B, C, F]
5.5 units: 16.5 hours lab (297 total hours).
Limitation on enrollment: Enrollment in the Radiography Program.
This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, patient information management, work efficiency and image evaluation is provided. This course is part of the third semester of a twenty-nine month program in Radiography and is only offered during fall semester. (12/05)

RADT-45C  ADVANCED RADIOLOGIC PROCEDURES I
2 units: 2 hours lecture.
Limitation on enrollment: Enrollment in the Radiography Program.
This course covers advanced radiographic positioning of vascular and non-vascular advanced procedures and interventional radiology. This course is part of the third semester of a twenty-nine month program in Radiography and is only offered during fall semester. (12/05)

RADT-45D  RADIOLOGIC PATHOLOGY
[CILC Area E, G]
1.5 units: 1.5 hours lecture.
Limitation on enrollment: Enrollment in the Radiography Program.
This course presents an introductory study of basic disease processes, nature and causes of disease and injury and their related radiographic significance. This course is part of the third semester of a twenty-nine month program in Radiography and is only offered during fall semester. (12/05)

RADT-49A-ZZ SPECIAL TOPICS IN MEDICAL IMAGING
.50-3 units: .50-3 hours lecture, 1 1/2-9 hours lab.
Limitation on enrollment: Current or previous student in an approved school of radiography or California-Certified in Diagnostic Radiology Technology or special approval of instructor.
This course is designed to address special topics in radiography and advanced imaging modalities to meet current communities of interest needs. Specific classes will be offered to help medical imaging technologists cope with the rapidly-changing imaging environment (units do not count toward graduation). (4/07)

RADT-50  CAREER EXPLORATION IN MEDICAL IMAGING
1 unit: 54 total hours lab.
Limitation on enrollment: Negative TB Screening Test or Chest X-ray within last 6 months.
This course allows students to sample an experience in a medical imaging setting in order to enhance a student's understanding of the challenges and opportunities in considering a career in radiography and related imaging modalities. The instructor of record will be responsible for arranging the student's clinical placement during the course's orientation meeting. The course is repeatable three times. With each subsequent enrollment, different clinical competencies will be assigned. (5/08)

RADT-67A  ADVANCED RADIOLOGIC PROCEDURES II
2 units: 2 hours lecture.
Limitation on enrollment: Enrollment in the Radiography Program.
This course covers advanced digital radiography and the basic principles of CT, MRI, and Sonography. It will provide the student with a broad understanding of the purpose, imaging techniques, equipment and application of the listed modalities. This course is part of the fourth semester of a twenty-nine month program in Radiography and is only offered during spring semester. (12/05)

RADT-67B  ADVANCED CLINICAL EDUCATION I
[CILC Area B, C, F]
10 units: 540 total hours lab.
Limitation on enrollment: Enrollment in the Radiography Program.
This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, patient information management, work efficiency and image evaluation is provided. This course is part of the fourth semester of a twenty-nine month program in Radiography and is only offered during spring semester. (12/05)

RADT-67C  ADVANCED CLINICAL EDUCATION II
[CILC Area B, C, F]
10 units: 540 total hours lab.
Limitation on enrollment: Enrollment in the Radiography Program.
This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, patient information management, work efficiency and image evaluation is provided. This course is part of the fourth semester of a twenty-nine month program in Radiography and is only offered during spring semester. (12/05)

RADT-67D  ADVANCED CLINICAL EDUCATION III
[CILC Area B, C, F]
10 units: 540 total hours lab.
Limitation on enrollment: Enrollment in the Radiography Program.
This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, patient information management, work efficiency and image evaluation is provided. This course is part of the fourth semester of a twenty-nine month program in Radiography and is only offered during spring semester. (12/05)
RADT-67D  FLUOROSCOPY
2 units: 40 total hours lecture.
Limitation on enrollment: Enrollment in the Diagnostic Radiologic Technology Program.
This course is designed to prepare the senior radiography student or radiographer (CRT) to sit for the California state fluoroscopic radiation protection examination. Upon successful completion of the course, students will receive a fluoroscopy permit certificate. This course is part of the fifth semester of a twenty-nine month program in Diagnostic Radiologic Technology and is only offered during fall semester. (2/08)

RADT-68A  RADIOLOGIC SCIENCE III
2 units: 2 hours lecture.
Limitation on enrollment: Enrollment in the Radiography Program.
This course is designed to provide an overview of the principles of the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues and the body as a whole are presented as are factors affecting biologic response, including acute and chronic effects of radiation. The course will also present an overview of the principles of radiation protection including the responsibilities of the radiographer for patients, personnel and the public. Radiation health and safety regulatory involvement is also incorporated. This course is part of the second summer session of a twenty-nine month program in radiography and is only offered during summer session. (12/05)

RADT-68B  ADVANCED CLINICAL EDUCATION II
[CILC Area B, C, F]
7 units: 378 total hours lab.
Limitation on enrollment: Enrollment in the Radiography Program.
This course provides clinical experience for reapplication of theoretical principles and concepts covered in previous and current didactic coursework. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, patient information management, work efficiency and image evaluation is provided. This course is part of the five semester of a twenty-nine month program in Radiography and is only offered during summer session which runs approximately 12 weeks in duration. This course is offered during the second of three phases of internship. (12/05)

RADT-69A  INTEGRATIVE STUDY IN RADIOGRAPHY
2 units: 2 hours lecture.
Limitation on enrollment: Enrollment in the Radiography Program.
This course covers a comprehensive analysis and assessment of all previous radiography instructional course work in preparation for writing the national registry examination and state certification. Job market readiness skills will also be presented. This course is part of the fifth semester of a twenty-nine month program in Radiography and is only offered during fall semester. (12/05)

RADT-69B  ADVANCED CLINICAL EDUCATION III
[CILC Area B, C, F]
9 units: 486 total hours lab.
Limitation on enrollment: Enrollment in the Radiography Program.
This course provides clinical experience for re-application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, patient information management, work efficiency and image management and evaluation is provided. This course is part of the fifth semester of a twenty-nine month program in Radiography and is only offered during fall semester. This course is offered during the third and last phase of internship. (12/05)

RADT-69C  SECTIONAL ANATOMY
[CILC Area E, G]
1 unit: 1 hour lecture.
Limitation on enrollment: Enrollment in the Radiography Program.
This course covers introduction to sectional anatomy. Emphasis will be the major anatomic structures normally seen in transverse sections. Current imaging applications will also be included. This course is part of the fifth semester of a 29-month program in Diagnostic Radiologic Technology and is only offered during fall semester. (12/05)
Real Estate
Allied Health, Business and Public Safety

DEGREE
A.A. - Real Estate

CERTIFICATE
Real Estate

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%2123

Program Description
The Associate in Arts in Degree in Real Estate is in preparation for the California Real Estate Salesman’s License and Broker’s License.

Entry positions open to graduates who pass the California State examination for a salesperson’s or broker’s license include those of sales agent, junior appraiser, rental agent, or property manager for a bank or land-development company; or in the property department of a corporation, a savings-and-loan company, or an insurance company. Graduates may also search titles and close transactions in the escrow departments of any of these establishments or for escrow companies.

The course of study includes instruction in the following: principles of real estate, real estate practices, legal aspects of real estate, real estate finance, real estate appraisal, real property management, and escrow procedure.

Career Opportunities
- Real Estate Agent
- Broker
- Appraiser
- Banking
- Property Management
- Real Estate Consulting

Off-Site Resources
California Department of Real Estate
www.dre.ca.gov
California Association of REALTORS®

Program Requirements

Completion of these core courses plus appropriate experience in real estate sales will qualify the student to take the broker’s examination.

Suggested electives include:
- BUS-10 Introduction to Business
- BUS-43 Business Communication
- CPSC-01 Introduction to Management Information Systems
- ECON-01A Introduction to Microeconomics
- ECON-01B Introduction to Macroeconomics
- MDSE-32 Salesmanship
- MDSE-33 Advertising
- AOM-50B Document Formatting & Keyboarding

Students must meet the graduation requirements and complete the major requirements with the following courses.

Program Student Learning Outcomes
A. Students will have the knowledge and skills required to pass the California Real Estate Salesman’s licensing exam and when accompanied by the statutory two-years of salesperson experience, the Broker’s licensing exam. They will have a basic platform which to continue their education in real estate, and have the knowledge and skills to invest prudently and knowledgeably in real estate.
B. Apply time value of money concepts to a variety of situations.
C. Explain the major financial markets and institutions and then compare and contrast the roles they play in our economic system.
D. Explain the relationship between risk and return.
E. Compare and contrast the various real estate investment opportunities.
F. Analyze, compare, and contrast various real estate appraisals methods.
G. Evaluate and understand the implementation of mortgage loans.
H. Analyze, compare and contrast various real estate appraisal valuation methods.
I. Compare and contrast the various laws and ethics surrounding real estate activities.

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<th>Course</th>
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<td>ACTG-51</td>
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<td>BUS-18A</td>
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<td>CPSC-30</td>
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CERTIFICATE
Real Estate (05600.CL)

A Certificate of Achievement will be awarded upon the satisfactory completion of the required courses for the A.A. Degree in Real Estate.

Program Student Learning Outcomes
J. Students will have the knowledge and skills required to pass the California Real Estate Salesperson’s licensing exam and when accompanied by the statutory two-years of salesperson experience, the Broker’s licensing exam. They will have a basic platform which to continue their education in real estate, and have the knowledge and skills to invest prudently and knowledgeably in real estate.
K. Apply time value of money concepts to a variety of situations.
L. Explain the major financial markets and institutions and then compare and contrast the roles they play in our economic system.
M. Explain the relationship between risk and return.
N. Compare and contrast the various real estate financial markets.
O. Analyze, compare, and contrast various real estate investment opportunities.
P. Evaluate and understand the implementation of mortgage loans.
Q. Analyze, compare and contrast various real estate appraisal valuation methods.
R. Compare and contrast the various laws and ethics surrounding real estate activities.

Units
ACTG-04A Fundamentals of Financial Accounting .......................... 4
or
ACTG-51 Applied Accounting......................................................... 3
BUS-18A Business Law ..................................................................... 4
CPSC-30 Computer Applications ..................................................... 3
REAL-42 Real Estate Principles....................................................... 3
REAL-43 Real Estate Practices .................................................................. 3
REAL-45 Real Estate Finance .................................................................. 3
REAL-46 Real Estate Appraisal .......................................................... 3
REAL-48 Real Property Management .................................................. 3
REAL-49 Escrow Procedure ............................................................... 2

Recommended Sequence: A.A. - Real Estate (05600.AA)

Fall 1
REAL-42 Real Estate Principles ....................................................... 3
REAL-45 Real Estate Finance .......................................................... 3

Spring 1
REAL-42 Real Estate Principles ....................................................... 3
REAL-43 Real Estate Practices .......................................................... 3
REAL-46 Real Estate Appraisal .......................................................... 3

Recommended Sequence: Certificate Real Estate (05600.CL)

Fall 1
REAL-42 Real Estate Principles ....................................................... 3
REAL-45 Real Estate Finance .......................................................... 3

Spring 1
REAL-42 Real Estate Principles ....................................................... 3
REAL-43 Real Estate Practices .......................................................... 3
REAL-46 Real Estate Appraisal .......................................................... 3

REAL ESTATE (REAL)

REAL-42 REAL ESTATE PRINCIPLES
3 units: 3 hours lecture.
Prerequisite: REAL-42; Advisories: ENGL-81, ENGL-84.
This course is an analysis of principles of real estate in California, history of California real estate, property, contracts, agency, listings, real estate financing, deeds, liens and encumbrances, escrows and title insurance, land descriptions, real estate mathematics, and real estate licensing and state regulations. (1/09)

REAL-43 REAL ESTATE PRACTICES
3 units: 3 hours lecture.
Prerequisite: REAL-42; Advisories: ENGL-81, ENGL-84.
This course is an analysis of problems related to establishing and conducting a real estate business: the real estate office valuations of listings, prospecting, advertising, the selling process, closing the sale, financing real estate, exchanges and specializing brokerage, income properties, management and leasing, taxes and real estate deals, land utilization, and professional and public relations. (1/09)

REAL-45 REAL ESTATE FINANCE
3 units: 3 hours lecture.
Prerequisite: REAL-42; Advisories: ENGL-81, ENGL-84.
This course is a practical applied study and analysis of money markets, interest rates, and real estate financing. Actual case illustrations will demonstrate lending policies, and problems and rules involved in financing real property, including residential, multi-family, commercial, and special purpose properties. (11/06)

REAL-46 REAL ESTATE APPRAISAL
3 units: 3 hours lecture.
Prerequisite: REAL-42; Advisories: ENGL-81, ENGL-84.
This course explains methods and techniques for analyzing data used in the valuation of real property. Case study methods are employed; field work and demonstration and/or form appraisal reports are required. Principles and theories of real estate valuations, as well as the approaches to value (cost, market, income) are studied with an emphasis on residential properties. (11/06)

REAL-48 REAL PROPERTY MANAGEMENT
3 units: 3 hours lecture.
Prerequisite: REAL-42; Advisories: ENGL-81, ENGL-84.
This course provides a practical approach to management of developed real estate. Emphasis is given to economics of real estate; neighborhood analysis and rent schedules; management procedures; selection of personnel; contracts and purchasing; interior and exterior maintenance; repair; leasing, advertising, and publicity; managing family residences, apartment buildings, store buildings, office buildings, and other commercial properties; management accounting; modernization and rehabilitation; and adequate insurance plans. (11/06)

REAL-49 ESCROW PROCEDURE
3 units: 3 hours lecture.
Prerequisite: REAL-42; Advisories: ENGL-81, ENGL-84.
This course covers the principles and procedures involved in the process of opening and closing real estate escrow transactions. The course will define legal documents and terminology used in escrow procedure as well as explain the processing of documents and transfer of title combined with sale and closing procedures for several different types of escrows. (1/04)
RECREATION (RECR)

RECR-30 INTRODUCTION TO COMMUNITY RECREATION
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course teaches a general orientation to the field of recreation and parks. It will include a history of the recreation and leisure services, a description of recreational forms, and the nature, scope, and significance of leisure, and recreation as a social force in contemporary society. Emphasis is placed on the role of the professional leader in a variety of settings. (12/06)

SCIENCE (SCI)

SCI-30ABCD (1-3) SCIENCE LABORATORY EXPERIENCE
1 - 3 units: 3-9 hours lab.
(Note: The number designation following the letter indicates unit value, “1” being for 1 unit, “2” for 2 units, and “3” for 3 units.)
This course consists of special projects for students desiring hands-on experience in lab operation and/or techniques. Each letter (i.e., A, B, C, or D) may be taken only once.

SCI-39A-ZZ SPECIAL TOPICS IN SCIENCE
1 - 3 units: 0-3 hours lecture, 0-9 hours lab.
Advisories: ENGL-85; LRNR-30.
This course is designed to address topics not covered in current science courses. It will assist students in acquiring the most-up-to-date information possible in order to cope with the rapidly changing world of science. The course may be lecture only, lecture and laboratory, or laboratory only. (2/09)
Sociology & Social Sciences
Social Sciences, Humanities, and Fine Arts

DEGREE
A.A. - Social and Behavioral Sciences

Program Description
The degree in Social and Behavioral Science offers a focus on the interrelationships between individuals, families, groups, communities, societies, cultures, and historical time periods. This area of emphasis prepares students to understand people and their actions and is useful for a variety of careers that involve relating to people such as those in public service, education, law enforcement, government, and general business.

Students are strongly encouraged to consult with a counselor for specific information regarding their career planning.

DEGREE (5/08)
A.A. - Social and Behavioral Sciences (22600.AA)

For an Associate in Arts Degree with an area of emphasis in Social and Behavioral Science, students must meet the basic graduation requirements and complete 18 units from the courses listed below.

Select nine units from each of the following two categories. Courses listed below may be counted as general education requirements as well as area of emphasis requirements.

Program Student Learning Outcomes
A. Develop an understanding of various aspects of human nature and behavior, and how those impact social behavior and relationships.
B. Develop a broader understanding of diverse cultures and historical perspectives to better understand human behavior in contemporary society.
C. Develop an understanding of individual motivation and behaviors within various social constructs, including economic, psychological, and sociological.

Agricultural Economics ...........................................3
Agriculture, Environment, and Society .......................3
Physical Anthropology .............................................3
Cultural Anthropology .............................................3
Southeast Asian Culture: Hmong Culture ...................3
Child, Family, and Community ..................................3
Human Development ...............................................3
Introduction to Intercultural Communication ................3
Criminology ..........................................................3
Introduction to Criminal Justice ................................3
Introduction to Macroeconomics ...............................3
World Geography ....................................................3
Introduction to Psychology ........................................3
Honors Introduction to Psychology ............................3
Biological Psychology .............................................3
Social Psychology ...................................................3
Human Sexuality .....................................................3
Personal and Social Adjustment ...............................3
Abnormal Psychology ..............................................3
Applied Psychology ................................................3
Introduction to Sociology .........................................3
Contemporary Social Problems ..................................3

History of Civilization: Part I ................................3
History of Civilization: Part II ................................3
History of the Americas: Part I .................................3
History of the Americas: Part II ...............................3
Introduction to East Asian Civilization: China ...............3
Introduction to East Asian Civilization: Japan ................3
United States History and United States Constitution ....3
Honors United States History and United States Constitution ..........................................................3
U.S. History and California State & Local Government ..........................................................3
Honors U.S. History and California State & Local Government ..........................................................3
The History of Minorities in America – Ethnic Groups, 19th Century to Present ................................3
History of Minorities – Black Emphasis ......................3
U.S. History of Hispanic-Americans in the Southwest ....3
History of the Native American ................................3
History of California ...............................................3
Exploring California’s Past: Pre-European Contact to the 20th Century ........................................3
Comparative Cultures ...............................................3
Essentials of the American Political System ................3
An Introduction to World Political Systems ..................3
Introduction to Social Science ...................................3
SOCIAL SCIENCE (SCSC)
SCSC-01 INTRODUCTION TO SOCIAL SCIENCE
(CSU breadth area D7) (IGETC area 4G)
3 units: 3 hours lecture.
Advisory: ENGL-85.
Introduction to Social Science offers an interdisciplinary view of society and of the individual. The course studies effects of technology, ideology, and historical experience on institutional and personal behavior. In addition, the course surveys important knowledge and research in the fields of anthropology, economics, education, history, political science, psychology, and sociology. (3/06)

SOCIOLOGY (SOC)
SOC-01 INTRODUCTION TO SOCIOLOGY
(CSU breadth area D0) (IGETC area 4J)
3 units: 3 hours lecture.
Advisories: ENGL-01A.
This course provides an introduction into what it means to be “sociologically mindful” and to think “sociologically” while understanding the difference from other ways of seeing the social world. The course begins with the understanding of the differences between personal troubles and public issues, and how sociologist apply various theoretical perspectives to a wide range of issues, such as: culture; socialization; social structure of society; deviance; issues of feminization; family; gender; race; inequality; economics; politics and population; and the relationship between the individual and society. The course accents international comparisons to show how similar institutions are structures and function differently in different societies around the world. (2/06)

SOC-02 CONTEMPORARY SOCIAL PROBLEMS
3 units: 3 hours lecture.
Advisories: ENGL-01A.
SOC-02 introduces fundamental theories and methodologies employed in the study of contemporary social problems. An emphasis is placed on analysis of causes and possible solutions to such problems as poverty, discrimination, crime, delinquency, alcoholism, drug abuse, suicide, family, and politics. A global perspective focuses on the international influences and contributions to various contemporary social problems. (2/06)

SOC-28 MARRIAGE AND THE FAMILY
3 units: 3 hours lecture.
Advisory: ENGL-85.
This course provides an overview of sociological theories and concepts utilized to investigate marriage and family relationships. An empirical as well as experiential analysis of marriage and family functions, structures, and roles is emphasized. Special focus is paid to contemporary issues, concerns, and debates regarding marriage and family dynamics. (2/06)

SOC-33 WORKING EFFECTIVELY WITH FAMILIES (Also: CLDV-33 and PSYC-33)
1 unit: 1 hour lecture.
Advisory: ENGL-85.
This is a course designed to teach students how to work with parents in school settings. Students will examine current ways of parent involvement, parent rights and responsibilities, and ways of keeping parents informed. (11/05)
Sonography
Allied Health, Business and Public Safety

CERTIFICATES
Diagnostic Medical Sonography
Diagnostic Medical Sonography (Cardiac Track)

Gainful Employment Disclosure Metrics
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:
https://skydrive.live.com/View.aspx?cid=5E3D05E0D2CF60&resid=5E3D05E0D2CF60%21223

Web site
www.mccd.edu/alliedhealth

Program Description
The Diagnostic Medical Sonography Program will offer didactic and clinical training in two tracks in order to accommodate and facilitate meeting the critical shortage of general sonographers (Abdominal and OB/GYN track) and echocardiographers (Cardiac Track). The campus hands-on campus learning along with the clinical education will provide our students with job-ready skills.

Accreditation
The Merced College Diagnostic Medical Sonography and Cardiac Track Programs have been fully accredited by the Joint Review Committee on Education in Diagnostic Medical Sonography *(JRC-DMS) and the Commission on Accreditation of Allied Health Education Programs **(CAAHEP) in General Sonography and Echocardiography in September 2006.
*JRC-DMS - Joint Review Committee on Education in Diagnostic Medical Sonography; 2025 Woodlane Dr; St. Paul, MN 55125-2998; www.jrcdms.org
**CAAHEP-Commission on Accreditation of Allied Health Education Programs; 1361 Park St; Clearwater, FL 33756; www.caahep.org

Program Start Dates
Spring 2013, 2015

Highlights
The Allied Health Center houses a complete Sonography Suite, large computer lab, conference rooms, study rooms and multiple large and small classrooms. The Sonography Programs have state-of-the-art equipment and software that assist students with learning current procedures.

CERTIFICATE
Diagnostic Medical Sonography (12800.CT)

ABDOMINAL AND OB/GYN
This option is a full-time Certificate of Achievement program. The entire program is 18 months in length, and is composed of two summer sessions and three semesters. If you wish to enter the program, you must make a formal application, including verification of completion of prerequisites listed below. Upon submission of a COMPLETED application, the date and time received will be stamped on the application. After your records have been verified, that date and time will become your official application date. You will receive a notice in the mail, advising you of the following:
● That you “Meet All Program Requirements/Prerequisites”
● Your official application date and time, and
● Your number on the enrollment list.

If you do NOT meet all the application requirements, your application will be returned, nullifying any application receipt date. If you are accepted into the program but must decline, your application will be kept on file.
Enrollment will be based on a first-come, first-served basis. Only one class is in session at a time.

Requirements for Application and Prerequisites

Requirements:
Completion of a two-year Allied Health program that is patient-care related, such as radiologic technology, registered nursing, respiratory therapist, physical therapy, associate degree licensed vocational nurse, or baccalaureate degree and health care experience.

Prerequisites:
BIOL-16; BIOL-18: MATH-81: ALLH-67; and PHYS-10 or RADT-40. All program prerequisites must be passed with a grade of “C” or higher with a minimum cumulative grade of 2.35 GPA

Contact the Allied Health Office for an application or visit our website at: www.mccd.edu/alliedhealth/sonohp.htm.

Upon admission to the program, you are required to have a physical examination providing evidence of good health and immunization, and must provide annual proof of a negative TB skin test or TB screening, and must have a chest X-ray at least every two years. You must also comply with the technical standards set for working in this field. Additional information on uniforms will be provided at that time.

While enrolled in the program, you will be assigned to various clinic facilities in addition to the on-campus portions of the program. By application and enrollment into the program, you agree to accept clinical assignments in whatever clinical site you are assigned. Clinical assignments will be scheduled during the normal working day hours.

In order to continue in the program, you must complete the Diagnostic Medical Sonography courses in the specified sequence offered per session/semester with a minimum grade of “C” in each course.
If you successfully complete the Diagnostic Medical Sonography Program, you will be awarded a Certificate of Achievement in Diagnostic Medical Sonography and will be eligible to write the following qualifying examinations of the American Registry of Diagnostic Medical Sonographers (ARDMS): 1) physical principles/instrumentation, and 2) Special Examination Option
in Abdomen, and 3) Special Examination Option in OB/GYN.

Program Student Learning Outcomes
A. Student will develop the writing skills to prepare medical manuscripts and present clinical case studies
B. Student will analyze the theory of physics, anatomy and pathophysiology, and sonographic appearance of normal and disease processes
C. Student will meet medical ethical standards and provide proof of cultural competency
D. Student will be able to display both initial and final competencies in the various modalities of sonography

First Summer Session
SONO-40  Basic Ultrasound Physics................................. 1.5
SONO-41  Introduction to Sonography................................. 1.5

First Semester (Fall)
SONO-42A  Abdominal Sonography........................................ 4
SONO-42B  Beginning Clinical Experience I............................ 9

Second Semester (Spring)
SONO-43A  OB/GYN Sonography........................................... 4
SONO-43B  Beginning Clinical Experience I............................ 9

Second Summer Session
SONO-44A  Advanced Ultrasound Physics.............................. 1.5
SONO-44B  Advanced Clinical Experience I............................. 4.5
SONO-44C  Superficial Structures........................................ 1

Third Semester (Fall)
SONO-45A  Integrative Study in Sonography.......................... 2
SONO-45B  Advanced Clinical Experience II........................... 9
SONO-45C  Basics of Vascular Sonography............................. 2

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CERTIFICATE
Diagnostic Medical Sonography: Cardiac
Track (12801.CT)

ECHOCARDIOGRAPHY
This option is a full-time Certificate of Achievement program. The entire program is 24 months in length, and is composed of two summer sessions and four semesters. If you wish to enter the program, you must make a formal application, including verification of completion of prerequisites listed below. Upon submission of a COMPLETED application, the date and time received will be stamped on the application. After your records have been verified, that date and time will become your official application date.
You will receive a notice in the mail advising you of the following:
● That you “Meet All Program Requirements/Prerequisites”
● Your official application date and time, and
● Your number on the enrollment list.

If you do NOT meet all the application requirements, your application will be returned, nullifying any application receipt date. If you are accepted into the program but must decline, your application will be kept on file.
Enrollment will be based on a first-come, first-served basis. Only one class in is session at a time.

Requirements for Application and Prerequisites
Requirements:
Completion of a two-year Allied Health program that is patient-care related, such as radiologic technology, registered nursing, respiratory therapist, physical therapy, associate degree licensed vocational nurse, or baccalaureate degree and health care experience.

Core Prerequisites
BIOL-16; BIOL-18; MATH-81: ALLH-67; and PHYS-10 or RADT-40. All option prerequisites must be passed with a grade of “C” or higher with a minimum cumulative grade of 2.35 GPA

Track 1 - Prerequisites
Candidates following this track must have completed a two-year Allied Health Degree, i.e. radiologic technology, respiratory therapist, registered nursing, physical therapy, associate degree licensed vocational nurse, or baccalaureate degree and health care experience. These candidates are eligible to take their ARDMS exam immediately upon graduation.

Track 2 - Prerequisites
Candidates following this track must be an EKG technician in addition to completing the core prerequisites. These candidates are eligible to write the ARDMS Echocardiography and Cardiovascular Physics exams under the ARDMS’s Prerequisite No. 1 examination option.

This option provides the didactic and clinical experience to meet the ARDMS guidelines for registry eligibility in the areas of Adult Echocardiography and Cardiovascular Physics.

Contact the Allied Health Office for an application or visit our web site at: www.mccd.edu/alliedhealth/sonohp.htm.

Upon admission to the program, you are required to have a physical examination providing evidence of good health and immunization, and must provide annual proof of a negative TB skin test or TB screening, and must have a chest X-ray at least every two years. You must also comply with the technical standards set for working in this field. Additional information on uniforms will be provided at that time.

While enrolled in the program, you will be assigned to various clinical facilities in addition to the on-campus portions of the program. By application and enrollment into the program, you agree to accept clinical assignments in whatever clinical site you are assigned. Clinical assignments will be scheduled during the normal working day hours.

If you successfully complete the Diagnostic Medical Sonography Program (Cardiac Option), you will be eligible to write the following qualifying examinations of the American Registry of Diagnostic Medical Sonographers (ARDMS): 1) Special Examination Option in Adult Echo, and 2) Special Examination Option in Cardiovascular Physics.

Program Student Learning Outcomes
A. Student will develop the writing skills to prepare medical manuscripts and present clinical case studies
B. Student will analyze the theory of physics, anatomy and pathophysiology, and sonographic appearance of normal and disease processes
C. Student will meet medical ethical standards and provide proof of cultural competency
D. Student will be able to display both initial and final competencies in the various modalities of sonography

First Semester (Fall)
SONO-40  Basic Ultrasound Physics................................. 1.5
SONO-41  Introduction to Sonography................................. 1.5

First Summer Session
SONO-44A  Advanced Ultrasound Physics.............................. 1.5
SONO-44B  Advanced Clinical Experience I............................. 4.5
SONO-44C  Superficial Structures........................................ 1

Third Semester (Spring)
SONO-37A  Cardiology and Principles................................ 2
SONO-37B  Beginning Clinical Experience II........................... 9

Second Summer Session
SONO-44A  Advanced Ultrasound Physics.............................. 1.5
SONO-38B  Advanced Clinical Experience I............................. 4.5

Fourth Semester (Fall)
SONO-45A  Integrative Study in Sonography.......................... 2
SONO 39B  Advanced Clinical Experience II........................... 9

47.5
SONOGRAPHY, DIAGNOSTIC MEDICAL
(SONO)
SONO-36B BEGINNING CLINICAL EXPERIENCE I
9 units: 486 total hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical
Sonography Program (Cardiac Track). Prerequisite: SONO-46A.
Two-way corequisite: SONO-36C.
This course provides clinical experience for application of theoretical
principles and concepts covered in previous and current didactic
coursework. Clinical experience in patient care and handling, scanning
techniques, instrumentation, work efficiency and image evaluation for
cardiac imaging is provided. This course is part of the Diagnostic Medical
Sonography Program (Cardiac Track) and is only offered during the fall
semester. (3/05)

SONO-36C ADVANCED ECHOCARDIOGRAPHY
4 units: 3 hours lecture, 3 hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical
Sonography Program (Cardiac Track). Prerequisite: SONO-46A.
Two-way corequisite: SONO-36B.
This course covers advanced echocardiographic sonographic positioning
and scanning protocol including transthoracic, transesophageal, pediatric,
and fetal echocardiography; related anatomy and physiology to include
cardiac pathology and clinical symptomology and how they relate to the
sonographic appearance of these structures. Interpretation and critique
of normal and abnormal anatomy with correction of clinical, didactic and
image information will be presented. The laboratory component of this
course will include demonstration and scanning exercises to provide a "live
lab" experience in conducting echocardiographic sonographic procedures.
This course is part of the Diagnostic Medical Sonography Program
(Cardiac Track). (3/05)

SONO-37A CARDIAC PHYSIOLOGY AND PRINCIPLES
2 units: 1.5 hours lecture, 1.5 hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical
Sonography Program (Cardiac Track). Prerequisites: SONO-40,
SONO-46A. Two-way corequisite: SONO-37B.
This course covers cardiac physiology and cardiology physics as it relates
to echocardiography. The emphasis will describe the effects of pressure,
loading, and volume as they relate to the following disease states:
heart failure, shock, valvular stenosis and regurgitation, intracardiac
shunts, pulmonary disease, pericardial disease, and cardiomyopathies.
Hemodynamics, spectral Doppler, and color flow technologies will
be described. The laboratory component of this course will include
demonstration and scanning exercises to provide a "live lab" experience in
conducting echocardiographic procedures. This course is a continuation
of the Diagnostic Medical Sonography Program (Cardiac Track). (3/05)

SONO-37B BEGINNING CLINICAL EXPERIENCE II
9 units: 486 total hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical
Sonography Program (Cardiac Track). Prerequisite: SONO-36B.
Two-way corequisite: SONO-37A.
This course provides clinical experience for application of theoretical
principles and concepts covered in previous and current didactic
coursework. Clinical experience in patient care and handling, scanning
techniques, instrumentation, work efficiency and image evaluation for
echocardiographic imaging is provided. (3/05)

SONO-38B ADVANCED CLINICAL EXPERIENCE I
4.5 units: 243 total hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical
Sonography Program (Cardiac Track). Prerequisite: SONO-37B.
This course provides continued clinical experience for application of
theoretical principles and concepts covered in previous and current didactic
coursework. Clinical experience inpatient care and handling, scanning
techniques, instrumentation, work efficiency and image evaluation for
cardiac imaging is provided. This course is part of the Diagnostic Medical
Sonography Program (Cardiac Track). (4/05)

SONO-39B ADVANCED CLINICAL EXPERIENCE II
9 units: 486 total hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical
Sonography Program (Cardiac Track). Prerequisite: SONO-38B.
This course provides clinical experience for advanced application of
theoretical principles and concepts covered in previous and current didactic
coursework. Clinical experience in patient care and handling, scanning
techniques, instrumentation, work efficiency and image evaluation for
cardiac imaging is provided. This course is part of the Diagnostic Medical
Sonography Program (Cardiac Track). (4/05)

SONO-40 BASIC ULTRASOUND PHYSICS
[CILC area B]
1.5 units: 18 total hours lecture, 27 total hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical
Sonography program. Prerequisites: MATH-81 or MATH-B; PHYS-10
or RADI-40.
This course covers basic principles and terminology of diagnostic
ultrasound physics to include: a review of mathematical skills, transducers,
beam dynamics, and instrumentation. Hands-on instruction will be provided
to introduce the student to necessary elementary skills in scanning as it
pertains to the physical nature of ultrasound. (2/08)

SONO-41 INTRODUCTION TO SONOGRAPHY
[CILC area A,B,C,D,E,F]
1.5 units: 18 total hour lecture, 27 total hours lab.
Limitation on enrollment: Completion of a two-year Allied Health
program that is patient-care related, such as radiologic technology,
registered nursing, respiratory therapist, physical therapy, associate
degree-licensed vocational nurse, or a baccalaureate degree in
biological sciences with patient care experience; minimum cumulative
GPA of 2.35 in prerequisite course work; enrollment in the Diagnostic
Medical Sonography Program. Prerequisite: ALLH-67.
This course is an overview of diagnostic medical sonography (DMS) and
its role in health care delivery. Students will be oriented to the academic
and administrative structure of the program, clinical affiliates, and to the
profession as a whole. Ethical and legal responsibilities of the professional
relative to health care delivery will be addressed. An introduction to
the principles, instruments, and routine sonographic procedures will be
emphasized. The laboratory portion of this course will include a hands-
on orientation to the computerized equipment and instrumentation.
An orientation in the use of the library and library materials will also be
presented. (2/08)

SONO-42A ABDOMINAL SONOGRAPHY
[CILC area B]
4 units: 3 hours lecture, 3 hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical
Sonography Program--Abdominal & OB/GYN Track. Prerequisites:
BIOL-16, BIOL-18.
This course covers abdominal sonographic positioning and scanning
protocol; related anatomy and physiology to include the retroperitoneum;
pathology and clinical symptomology and how they relate to the
sonographic appearance of these structures. Interpretation and critique
of normal and abnormal anatomy with correlation of clinical, didactic, and
image information will be presented. The laboratory component of this
course will include demonstration and scanning exercises to provide a "live
lab" experience in conducting abdominal sonographic procedures. (2/08)

SONO-42B BEGINNING CLINICAL EXPERIENCE I
[CILC area B]
9 units: 28 hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical
Sonography Program--Abdominal & OB/GYN Track. Two-way
corequisite: SONO-42A.
This course provides clinical experience for application of theoretical
principles and concepts covered in previous and current didactic
course work. Clinical experience in patient care and handling, scanning
techniques, instrumentation, work efficiency, and image evaluation for
abdominal imaging is provided. (2/08)
SONO-43A OB/GYN SONOGRAPHY
[CILC area B]
4 units: 3 hours lecture, 3 hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program--Abdominal & OB/GYN Track.
This course presents a review of anatomy and physiology of the gravid and nongravid pelvis. Techniques of transabdominal and transvaginal preparation are introduced. Symptomology of the female patient with correlation to the sonographic appearance of pathology are covered. First, second, and third trimester obstetrical assessment are covered in depth. (2/08)

SONO-43B BEGINNING CLINICAL EXPERIENCE II
[CILC area B]
9 units: 28 hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program--Abdominal & OB/GYN Track. Two-way corequisite: SONO-43A.
This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, scanning techniques, instrumentation, work efficiency, and image evaluation for obstetric and gynecological imaging, in addition to abdominal imaging, is provided. (2/08)

SONO-44A ADVANCED ULTRASOUND PHYSICS
[CILC area B]
1.5 units: 1.5 hours lecture.
Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program.
This course is a continuation of basic physics and instrumentation including continuous and pulsed wave Doppler. Basic principles of color flow imaging, advanced principles in medical ultrasound instrumentation, hemodynamics, bioeffects, artifacts, and sonographic quality control procedures are also covered. (2/08)

SONO-44B ADVANCED CLINICAL EXPERIENCE I
[CILC area B]
4.5 units: 252 total hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program--Abdominal & OB/GYN Track. Two-way corequisite: SONO-44C.
This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, scanning techniques, instrumentation, work efficiency, and image evaluation for superficial structure is provided. Clinical experience in abdominal, obstetric and gynecological imaging is also provided. (2/08)

SONO-44C SUPERFICIAL STRUCTURES
[CILC area B]
1 unit: 9 total hours lecture, 27 total hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography program--Abdominal & OB/GYN Track.
This course covers basic positioning and scanning protocol of the superficial structures; related anatomy and physiology to include the neck, breast, and testes; and pathology and clinical symptomology and how they relate to the sonographic appearance of these structures. Interpretation and critique of normal and abnormal anatomy with correlation of clinical didactic and image information will be presented. The laboratory component of this course will include demonstration and scanning exercises to provide a “live lab” experience in conducting superficial structure procedures. (2/08)

SONO-45A INTEGRATIVE STUDY IN SONOGRAPHY
[CILC area B]
2 units: 2 hours lecture.
Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography program.
This course covers a comprehensive analysis and assessment of all previous diagnostic medical sonography instructional course work in preparation for writing the national registry examination. Job market readiness skills will also be presented. (2/08)

SONO-45B ADVANCED CLINICAL EXPERIENCE II
[CILC area B]
9 units: 28 hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography program--Abdominal & OB/GYN Track. Two-way corequisite: SONO-45C.
This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, scanning techniques, instrumentation, work efficiency, and image evaluation of basic vascular sonography is provided. Clinical experience in abdominal, obstetric, gynecological, and superficial structures imaging is also provided. (2/08)

SONO-45C BASICS OF VASCULAR SONOGRAPHY
[CILC area B]
2 units: 1.5 hours lecture, 1.5 hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography program.
This course covers basic positioning and scanning protocol of the vascular system. Vascular terminology specific to the hemodynamics of the arterial venous and cerebrovascular application will be presented. Normal, abnormal, and pathological states of the human vascular system with emphasis on the external carotid system and the venous systems of the lower extremities will be included. The laboratory component of this course will include demonstration and scanning exercises to provide a “live lab” experience in conducting basic vascular procedures. (2/08)

SONO-46A ECHOCARDIOGRAPHY
1.5 units: 1 hour lecture, 1.5 hours lab.
Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program.
This course is an introduction to acoustical physics and instrumentation, echocardiographic positioning and scanning protocol including 2D, M-mode, Color Flow, and Doppler Imaging; related anatomy, hemodynamics, and physiology to include ventricular function, intracardiac anatomy, valvular anatomy and function; pathology and clinical symptomology and how they relate to the sonographic appearance of these structures. Interpretation and critique of normal and abnormal anatomy with correlation of clinical, didactic, and image information will be presented. The laboratory component of this course will include demonstration and scanning exercises to provide a “live lab” experience in conducting echocardiographic procedures. (3/05)

SONO-49A-ZZ SPECIAL TOPICS IN DIAGNOSTIC MEDICAL SONOGRAPHY
0.5 - 3 units: 0.5-3 hours lecture, 0-9 hours lab.
Limitation on enrollment: Current student or graduate of a diagnostic medical imaging program or six months of experience in a diagnostic medical sonography career track.
This course is designed to address special topics in diagnostic medical sonography to meet the current needs of students. It will provide students access to instruction that will assist them in acquiring the most up-to-date information possible in order to cope with the rapidly changing health care environment. (4/05)
Spanish
Social Sciences, Humanities and Fine Arts

DEGREE
A.A. - Spanish

Program Description
Studies in foreign languages provide specialists to work in areas such as anthropology, economics, political science, literature, international business, and the travel industry. While teaching is one of the principal areas of employment, other careers may be found in interpreting, translating, research, diplomacy, libraries, publishing, and the service industries.

DEGREE
A.A. - Spanish (11600.AA)

For an Associate in Arts Degree in Spanish, students should meet the graduation requirements and complete the 26-unit curriculum as listed below. The courses listed below must be in addition to the basic graduation requirements.

Program Student Learning Outcomes
A. Speaking: Initiate, minimally sustain, and close in a simple way basic communicative tasks.
B. Listening: Distill information from such discourse and demonstrate understanding.
C. Writing: Compose a simple narrative and meet practical needs.
D. Culture: Recognize pervasive values of the culture.
E. Reading: Understand main ideas.

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<tr>
<th>Units</th>
<th>Course</th>
<th>Description</th>
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<tr>
<td>26</td>
<td>SPAN-01 Elementary Spanish</td>
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<td>SPAN-10 Spanish for Spanish Speakers</td>
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<td>SPAN-02 Elementary Spanish</td>
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<td>or</td>
<td>SPAN-11 Spanish for Spanish Speakers II</td>
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<td>SPAN-03 Intermediate Spanish</td>
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<td>SPAN-04 Intermediate Spanish</td>
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<td>HIST-04A History of Civilization: Part I</td>
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<td>HIST-04B History of Civilization: Part II</td>
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Recommended Sequence: a.a. - Spanish (11600.AA)

Fall 1
- SPAN-01 Elementary Spanish
- SPAN-10 Spanish for Spanish Speakers
- HIST-04A History of Civilization: Part I

Spring 1
- SPAN-02 Elementary Spanish
- SPAN-11 Spanish for Spanish Speakers II

SPANISH (SPAN)

SPAN-01 ELEMENTARY SPANISH
(CSU breadth area C2) (IGETC area 3B/6)
5 units: 5 hours lecture.
Prerequisite: SPAN-01 or two years of high school Spanish.
This course will focus on the development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in Spanish the most basic functions of everyday life. This course is not recommended for native speakers – native speakers should enroll in SPAN-10. (10/03)

SPAN-02 ELEMENTARY SPANISH
(CSU breadth area C2) (IGETC area 3B/6)
5 units: 5 hours lecture.
Prerequisite: SPAN-01 or two years of high school Spanish.
SPAN-02 is the continuation of SPAN-01. This course will focus on the further development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in Spanish the most basic functions of everyday life. This course is recommended for students who have completed two years of high school Spanish; it is not recommended for native speakers. Native speakers should enroll in SPAN-11. (3/10)

SPAN-03 INTERMEDIATE SPANISH
(CSU breadth area C2) (IGETC area 3B/6)
5 units: 5 hours lecture.
Prerequisite: SPAN-02 or SPAN-11. Advisory: LRNR-30.
SPAN-03 is the continuation of SPAN-02 and SPAN-11, as well as introduces the student to the remaining major linguistic concepts of the language. Through varied readings, composition, and discussion, the student will increase his or her vocabulary and cultural knowledge. (3/10)

SPAN-04 INTERMEDIATE SPANISH
(CSU breadth area C2) (IGETC area 3B/6)
5 units: 5 hours lecture.
Prerequisite: SPAN-03. Advisory: LRNR-30.
This course is a thorough review of the fundamentals of reading, writing, speaking, and understanding Spanish designed to aid the student in preparing for advanced studies in Spanish composition, grammar, and conversation, as well as literature in Spanish, history, and culture. (11/03)

SPAN-10 SPANISH FOR SPANISH SPEAKERS
(CSU breadth area C2) (IGETC area 3B/6)
5 units: 5 hours lecture.
Advisory: ENGL-84 or high school Spanish 2; LRNR-30.
This course is designed for students who are fluent in Spanish and who are ready to develop literacy skills. The course will focus on extensive reading of all types of texts and their reworking in written form with the intention of expanding the vocabulary, creating an incipient awareness of linguistic registers, discussing items beyond the familial routine, improving written expression, and developing an appreciation for Hispanic culture as manifested in Spanish speaking countries and the U.S. (3/08)
SPAN-11 SPANISH FOR SPANISH SPEAKERS II
   (CSU Breadth C2) (IGETC area 3B/6)
   5 units: 5 hours lecture.
   Prerequisite: SPAN-10 or two years of “Spanish for Spanish Speakers.” Advisory: LRNR-30.
   This course represents the continuation of SPAN-10. It is designed for students who are fluent in Spanish and who are ready to develop literacy skills. This course continues to focus on extensive reading of all types of texts and their reworking in written form with the intention of expanding the vocabulary, increasing the awareness of linguistic registers, discussing items beyond the familial routine, improving written expression -- particularly accentuation and spelling -- and developing an appreciation for Latino culture as manifested in any of the Spanish-speaking countries, including the USA. (11/11)

SPAN-35 WRITTEN ACCENTS
   1 unit: 1 hour lecture.
   Advisory: SPAN-02.
   This course teaches the student how to correctly place written accents on Spanish words. It includes the division of syllables and the accentuation of groups of words that do and do not require an accent either because of stress patterns or semantic criteria. This course is recommended for students who know how to correctly pronounce the vocabulary taught in Span-02, Elementary Spanish, or those who speak Spanish with family and friends. (2/08)

SPAN-39 ADVANCED SPANISH
   1 unit: 1 hour lecture.
   Prerequisite: SPAN-04. Advisory: LRNR-30
   This course is designed to acquaint the advanced student with specific items of Spanish language, literature, and culture, including history, political thought and sociological change. Papers will be written which will enforce knowledge of these areas and critical analysis of current Spanish intellectual and social thinking. This course may be repeated three times. (10/06)
Sports Medicine
Allied Health, Business, and Public Safety

Web site
www.mccd.edu/alliedhealth/

SPORTS MEDICINE (SPMD)
SPMD-41 SPORTS MEDICINE PROFESSIONS
1 unit: 1 hour lecture.
Advisory: ENGL-85.
This course presents the scope of practice of the various sports medicine professional career opportunities. (5/03)

SPMD-42 INTRODUCTION TO ATHLETIC TRAINING
3 units: 2 hours lecture, 3 hours lab.
Advisory: ENGL-85.
This is an introductory course in recognition, assessment, management, care, and prevention of injuries occurring in physical activities. (1/04)

SPMD-43 REHABILITATION IN SPORTS MEDICINE
3 units: 2.5 hours lecture, 1.5 hours lab.
Prerequisite: SPMD-42. Advisory: ENGL-85.
This course, through lecture and lab, will include applications and methods in athletic injury treatment and rehabilitation. It will teach a practical approach to rehabilitation programs through design, implementation, and supervision. (05/03)
STUDENT GOVERNMENT (STGV)

STGV-33ABCD STUDENT GOVERNMENT
2 units: 1 hour lecture, 3 hours lab.
(Note: Students may enroll without holding an office.)
This course surveys theory and practice of parliamentary law, committee
techniques, and democratic organization. Students will study some of
the factors of successful leadership and effective group membership.
Participation in student organization events, such as lectures, leadership
workshops, and conferences, is required.

Tutorial

English, Basic Skills and Child Development

TUTORIAL (TUTR)

TUTR-35 TUTORIAL SEMINAR
1 unit: 3 hours lab.
Advisories/prerequisites: none
This course is designed to provide tutors in the Merced College Tutorial
program with an opportunity to explore their experiences in the program
more fully. Tutors will receive instruction in the areas of tutorial technique,
group organizations, relationships with faculty and peers, evaluation
techniques, and content tutoring. (5/08)
Virtual Office
Allied Health, Business, and Public Safety

CERTIFICATE
Virtual Office Professional

CERTIFICATE (5/11)
Virtual Office Professional 05800.CE)

A Virtual Office Professional is an independent entrepreneur providing administrative, creative and/or technical services. Using advanced technological modes of communication and data delivery, a professional Virtual Office Professional assists clients from their own office on a contractual basis.

Successful completion of the Virtual Office Certificate prepares students for starting/working for a virtual office business. The certificate addresses issues of creating and managing their own virtual offices. Students are prepared to assume positions in business and industries that utilize virtual administrative support, including executive assistants and office support specialists.

Program Student Learning Outcomes
A. Use advanced technological modes of communication and data delivery to assist clients from their own office on a contractual basis
B. Construct virtual office business plan to be able to create and manage their own virtual office.
C. Apply appropriate social media for clients and for their own business.
D. Use web page design knowledge to create web sites for clients and for their own business.

Career Opportunities in Virtual
Virtual business owner, virtual assistant, executive assistant, web designer, social media coordinator.

Required Courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>AOM-53</td>
<td>Advanced Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>AOM-58</td>
<td>Web Site Development</td>
<td>1</td>
</tr>
<tr>
<td>CPSC-30</td>
<td>Computer Applications</td>
<td></td>
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<tr>
<td>VIRT-50</td>
<td>Virtual Office</td>
<td>3</td>
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<tr>
<td>VIRT-51</td>
<td>Social Influence Media</td>
<td>3</td>
</tr>
<tr>
<td>VIRT-52</td>
<td>Introduction To Desktop Publishing for the PC</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>Units</td>
<td>16</td>
</tr>
</tbody>
</table>

VIRT-50 VIRTUAL OFFICE
3 units: 3 hours lecture.
Advisories: BUS-10; CPSC-30.
Learn how to set up your own business in the virtual world. (11/10)

VIRT-51 SOCIAL INFLUENCE MEDIA
3 units: 3 hours lecture.
Advisories: AOM-50B; BUS-10; CPSC-30.
The student will learn how to use social influence media tools (for example, Twitter®, blogs,facebook® fan pages, YouTube® videos and apply them to a business web site effectively. (11/10)

VIRT-52 INTRODUCTION TO DESKTOP PUBLISHING
3 units: 3 hours lecture.
Advisories: AOM-50B; CPSC-30.
This course provides the student with proper procedures to create publications suitable for professional purposes, utilizing desktop publishing software for the PC. (11/10)
WATER/WASTEWATER TECHNOLOGY (WWT)

WWT-60 WATER TREATMENT PLANT OPERATIONS
3 units: 3 hours lecture.
Advisories: ENGL-81, ENGL-84; MATH-80.
This course is an introduction to water treatment plant operations and processes. It will include the study of sources of water supply, water quality, treatment systems, and introduction to water treatment operations arithmetic. This course prepares the student to test for state certification for water treatment plant operator grade I and II. (3/11)

WWT-61 INTRODUCTION TO WASTEWATER TREATMENT
3 units: 3 hours lecture.
Advisories: ENGL-81, ENGL-84; MATH-80.
This course is an introduction to wastewater treatment plant operations and processes. It will include the study of wastewater terminology; current methods of wastewater treatment – primary, secondary, and advanced; wastewater quality; and basic wastewater mathematics. This course prepares the student to test for state certification for wastewater treatment plant operation grade 1 and 2 (entry-level). (5/11)

WWT-62 WATER/WASTEWATER CALCULATIONS
3 units: 3 hours lecture.
Advisories: ENGL-81, ENGL-84; MATH-80.
This course provides for the mastery of mathematical calculations, specifically involving water and wastewater treatment plant operations and processes. It incorporates the use of handheld calculator, scientific notation, and the use of dimensional analysis as tools of problem solving. This course prepares the student to test for state certification for wastewater treatment plant operator, grade I and II (entry level). (5/11)

WWT-63 ADVANCED WATER TREATMENT PLANT OPERATIONS
3 units: 3 hours lecture.
Prerequisite: WWT-60. Advisory: ENGL-81.
This course is a continuation of the study of water treatment plant operations and processes, with emphasis on the knowledge and skills needed by operators of conventional surface and ground treatment. Topics include control of metallic ions, trihalomethanes, disposal of wastes in the operation of water plants, instrumentation and advanced laboratory procedures, safety and drinking water regulations. Provides background to prepare students to take state certification exams. (3/11)

WWT-64 ADVANCED WASTEWATER TREATMENT
3 units: 3 hours lecture.
Prerequisite: WWT-61. Advisory: ENGL-81.
This course is a continuation of the study of wastewater treatment plant operations and processes. It will emphasize the details of the process that occur in a waste water treatment plant, including aeration, maintenance of microbe populations, sludge digestions, and chemical removal. This course is designed for students who are in grades III and IV of state certification and satisfies eight educational points towards certification as a wastewater treatment operator. (5/11)
**Welding Technology**

**Career and Technical Education**

**DEGREE**
A.A. - Welding Technology

**CERTIFICATE**
Welding Technology

**Gainful Employment Disclosure Metrics**
Gainful Employment provides students information useful in determining which school to attend for career technical education training. GE information for Merced College can be found by selecting the Gainful Employment Disclosure icon on the Merced College home page or by logging on to the following web address:

https://skydrive.live.com/view.aspx?cid=5EE3D05E952DCF60&resid=5EE3D05E952DCF60%21223

**Program Description**
The Merced College Welding Technology Program prepares participants for employment in structural welding, welding repair, job shop welding, and production welding. The program is also designed to retrain and update persons presently employed in welding and related trades.

The program includes welding and related skills in the areas of (OAW) oxyacetylene welding, (OFC-A) oxyacetylene cutting, (SMAW) shielded metal arc welding, (GMAW) gas metal arc welding, (FCAW) flux cored arc welding, (GTAW) gas tungsten arc welding, (PAC) Plasma Arc Cutting, (CAC-A) air carbon arc cutting, and equipment used in metal fabrication. Basic welding processes are introduced and related skills are developed in the WELD-06 and WELD-07 courses. The WELD-40 and MECH-19 courses are designed to develop skills in design, layout, selection of materials, and production welding. WELD-45 is structured to prepare students for and pass the structural, (Limited Thickness, Steel) AWS qualification test. The curriculum used in the welding program is competency based.

Students are required to furnish their own safety glasses, welding gloves, pliers, measuring tape and text.

Students who wish to construct personal welding projects in WELD-40A & WELD-40B or MECH-19A & MECH-19B are required to pay for the cost of their materials.

**DEGREE**
A.A. - Welding Technology (09800.AA)

An Associate in Arts Degree in Welding Technology is available for students who complete the graduation requirements and successfully complete the courses required below for the certificate.

**Program Student Learning Outcomes**
A. Demonstrate competencies in job safety skills and awareness of workplace hazards.
B. Follow written and oral instructions in the interpretation of simple drawings and sketches, including welding symbols and the execution of the fabrication process.
C. Set up, maintain, and adjust welding related equipment.
D. Acquire skills and knowledge to make a successful transition to an entry-level position in the work force.
E. Pass workmanship tests using common welding processes.

**Units**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
<th>Units</th>
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<tbody>
<tr>
<td>DRFT-59</td>
<td>Basic Drafting</td>
<td>3</td>
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<tr>
<td>MATH-B</td>
<td>Applied Mathematics</td>
<td>5</td>
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<tr>
<td>WELD-06</td>
<td>Fundamentals of Oxy-Fuel &amp; Shielded Metal Arc Welding</td>
<td>3</td>
</tr>
<tr>
<td>WELD-07</td>
<td>Fundamentals of T.I.G. and M.I.G. Welding</td>
<td>3</td>
</tr>
<tr>
<td>WELD-40A*</td>
<td>Welding Design and Construction</td>
<td>3</td>
</tr>
<tr>
<td>WELD-40B*</td>
<td>Welding Design and Construction</td>
<td>3</td>
</tr>
<tr>
<td>WELD-45**</td>
<td>Advanced Arc Welding Procedures</td>
<td>3</td>
</tr>
<tr>
<td>WELD-48</td>
<td>Special Problems in Welding Technology</td>
<td>2</td>
</tr>
</tbody>
</table>

*Offered in the fall semester as a night class only. Offered in the spring semester as a day class only.
**Offered in the spring semester as a night class only.
CERTIFICATE
Welding Technology (09800.CL)

A Certificate of Achievement will be awarded upon successful completion of the full certificate courses listed below. For successful completion a student must complete the requirements with a minimum grade point of 2.0 in each course required for the certificate.

Program Student Learning Outcomes
A. Demonstrate competencies in job safety skills and awareness of workplace hazards.
B. Follow written and oral instructions in the interpretation of simple drawings and sketches, including welding symbols and the execution of the fabrication process.
C. Set up, maintain, and adjust welding related equipment.
D. Acquire skills and knowledge to make a successful transition to an entry-level position in the work force.
E. Pass workmanship tests using common welding processes.

Recommended Sequence: A.A. - Welding Technology (09800.AA) and Certificate Welding Technology (09800.CL)

Fall 1
DRFT-59 Basic Drafting.............................................. 3
MATH-B Applied Mathematics..................................... 5
WELD-06 Fundamentals of Oxy-Fuel & Shielded Metal Arc Welding.......................... 3
WELD-07 Fundamentals of T.I.G. and M.I.G. Welding......... 3
WELD-40A* Welding Design and Construction................. 3
WELD-40B* Welding Design and Construction................. 3
WELD-45** Advanced Arc Welding Procedures.............. 2
WELD-48 Special Problems in Welding Technology ............ 2

Spring 1
WELD-40A* Welding Design and Construction................. 3
WELD-45** Advanced Arc Welding Procedures.............. 3

Fall 2
WELD-40B* Welding Design and Construction................. 3
WELD-48 Special Problems in Welding Technology ............ 2

*Offered in the fall semester as a night class only. Offered in the spring semester as a day class only.
**Offered in the spring semester as a night class only.
Continuing Education (Noncredit)

CERTIFICATES
Basic Skills
Court Interpreter
English as a Second Language
Medical Assistant
Technical Office Occupations

Web site
www.mccd.edu/programs/cont_ed/index.html

Program Description
Continuing Education (Noncredit) Program Description
The Continuing Education (Noncredit) program office is located at the Merced Tri-College Center on the College campus. This program offers a wide variety of classes to the community with no registration fees. Classes are offered to assist students seeking employment, help them relearn skills and meet current job requirements, and promote skills for physical and emotional well-being. Call Janet Lyle, Director, at (209) 381-6540 for further information.

Career Opportunities
• Court Interpreter
• Medical Assistant
• Technical Office Occupation

Highlights
Noncredit Adult Continuing Education - Lifelong Learning for all Californians is part of the community colleges system of instruction. As a key aspect of lifelong learning, noncredit instruction:
• Serves as a gateway to college and/or a career path
• Assists parents in developing the skills needed to help their children succeed in school and life;
• Provides programs for immigrants to actively engage in the economy and civic life;
• Supports persons with disabilities to develop ways to be self-sufficient;
• Increases community awareness of health, safety, family and consumer issues;
• Provides access to basic skills and English as a Second Language; and
• Keeps older adults active and healthy.

CERTIFICATE (5/08)
Basic Skills Certificates of Completion (49165.NC)
The basic skills program consists of a sequence of courses to provide instruction for individuals in elementary and secondary-level reading, writing, computation and problem-solving skills in order to assist them in achieving their academic, vocational, and personal goals.

Program Student Learning Outcomes
Upon completion of the basic skills program the student will be able to addresses the content and proficiencies at levels through the twelfth grade and may incorporate a high school diploma.

SOCL-760 Career and Life Planning
SOCL-761 Vocational Life Planning
EDU-110 Reading and Computers I
EDU-111 Reading and Computers II
GED-101 Basic Skills and GED Preparation
EDU-112A Skills Acquisition for Student Success - General
EDU-112B Skills Acquisition for Student Success - Math
GUI-101 Introduction to College
GUI-102 Probation Solutions - Level 1

CERTIFICATE (5/08)
Court Interpreter Certificate Of Competency (21078.NC)
This is a short-term vocational program with high employment potential within the state of California. The program consists of a sequence of courses leading to a vocational/career technical objective and certificate that is directly related to employment.

Program Student Learning Outcomes
Upon completion of the Court Interpreter program students will be better prepared to pass state and federal examinations for certification as Spanish to English interpreters.

BUSN-752 Introduction to Microcomputers
LAW-765 Court Interpreter and Administrative Hearings
CERTIFICATE (5/08)

English as a Second Language Certificate of Completion (49194.NC)

The English as a Second Language (ESL) program consists of a sequence of courses to provide instruction in the English language to adult, non-native English speakers with varied academic, vocational and personal goals.

Program Student Learning Outcomes
Upon completion of the ESL program students will be prepared to advance to credit ESL courses, career-technical and personal growth opportunities.

ENG-801 ESL Level 1
ENG-802 ESL Level 2
ENG-803 ESL Level 3
ENG-804 ESL Level 4
ENG-805 ESL Level 5
ENG-806 ESL Level 6

CERTIFICATE (5/08)

Medical Assistant Certificate of Competency (10100.NC)

This is a Short-term vocational program with high employment potential. The program consists of a sequence of courses leading to a vocational/career technical objective and certificate that is directly related to employment.

Program Student Learning Outcomes
Upon completion of the Medical Assistant program the student will be prepared to seek employment directly related to the Medical Assisting career pathway.

BUSN-752 Intro to Microcomputers
EDU-112C Skills Acquisition for Student Success – Allied Health
MED-717 Medical Assisting

CERTIFICATE (5/08)

Technical Office Occupations Certificate of Competency (07744.NC)

This is a Short-term vocational program with high employment potential. The program consists of a sequence of courses leading to a vocational/career technical objective and certificate that is directly related to employment.

Program Student Learning Outcomes
Upon completion of the Technical Office Occupations program the student will be prepared to seek employment directly related to the Technical Office Occupations career pathway.

BUSN-749 Microcomputers and Business
BUSN-752 Introduction to Microcomputers

ELEMENTARY AND SECONDARY BASIC SKILLS

EDU-110 READING AND COMPUTERS
Course duration: 324 hours; open entry format.
This course is best-suited for adult learners below a third grade reading ability who need individual attention and a lot of encouragement and reinforcement while learning basic phonics, reading, spelling, and vocabulary skills. The student can learn at his/her own rate of speed with computer-assisted instruction. (12/05)

EDU-111 READING AND COMPUTERS II
Course duration: 324 hours, open entry format.
This course is best suited for adult learners at third grade level reading and vocabulary level up to approximately sixth grade level who require individual attention and reinforcement while reviewing basic phonics to improve reading, spelling, and vocabulary skills. (12/05)

EDU-112A SKILLS ACQUISITION FOR STUDENT SUCCESS – GENERAL
Course duration: 90 hours; open entry format.
This course provides a supervised learning experience for students who can benefit from individualized instruction in study skills and study habits in a laboratory setting. The study skills and study habits learned depend on the needs of the individual students and include educational computer applications, knowledge of college resources, and application of composition skills across the curriculum. (5/06)

EDU-112B SKILLS ACQUISITION FOR STUDENT SUCCESS – MATH
Course duration: 90 hours; open entry format.
This course provides a supervised learning experience for students who can benefit from individualized instruction in study skills and study habits in a laboratory setting. The study skills and study habits learned depend on the needs of the individual students and include educational computer applications, knowledge of college resources, and application of computation skills across the curriculum. (5/06)

EDU-112C SKILLS ACQUISITION FOR STUDENT SUCCESS – ALLIED HEALTH
Course duration: 27-36 hours; open entry format.
This course is designed to provide students the opportunity to improve and enhance their allied health skills through any number of training exercises that assist in the clinical development of and reinforcement of the practical allied health skills. The course is in a lab setting enriched with a resource library, manikins (for skills practice), and computer stations. Course duration is 27-36 hours. (3/11)

GED-101 BASIC SKILLS AND GED PREPARATION
Course duration: 324 hours; open entry format.
This course is designed to build the basic skills of adults in the areas of writing, reading comprehension, and mathematics. Special emphasis is placed on analytical reading skills, problem solving, and test preparation. Subject matters included are the areas covered by the GED exam such as science, social studies, literature, mathematics, and writing. This course utilizes a computer software program to assist students to learn at their own pace. (12/05)

GUI-101 INTRODUCTION TO COLLEGE
Course duration: 1.5 hours; open entry format.
This course will acquaint students with the College, academic regulations, the availability of campus resources, and the importance of educational planning. (1/06)

GUI-102 PROBATION SOLUTIONS – LEVEL 1
Course duration: 1.5 hours; open entry format.
This course is required for Level 1 probation students. Successful completion of this course is required for students to enroll. The student will learn strategies to get off probation status and become successful in reaching their educational goals. (1/06)
EDUCATION COURSES FOR PERSONS WITH SUBSTANTIAL DISABILITIES

ARTS-209 ARTS AND CRAFTS FOR DISABLED ADULTS
Course duration: 54 hours; open entry format.
This course is designed to help disabled persons acquire skills, knowledge, and an appreciation of a variety of art forms. Students will have an opportunity to participate in and learn about a variety of art subjects such as sculpture, design, basic use of color, drawing, painting, decorative arts, and needlework. (1/06)

LDIP-224 LEARNING DISABILITY IDENTIFICATION AND PLANNING
Course duration: 9 hours; open entry format.
Limitation on enrollment: Students must be enrolled in Merced College credit courses.
This course is designed to provide enrolled Merced College students with the assessment necessary to identify themselves as learning disabled using the California Community College Learning Disability Model (CCCLDM), and how to identify and understand the support services necessary for academic success. (5/06)

PHYC-206 BALANCE AND MOTOR SKILLS FOR THE PHYSICALLY LIMITED
Course duration: 54 hours; open entry format.
This course is a specialized exercise program for those in assisted living environments. Exercise routines provide physical, mental, and sensory stimulation, improve posture, and increase overall mobility and knowledge of proper body mechanics. (4/06)

SKLS-210 DAILY LIVING SKILLS
Course duration: 324 hours; open entry format.
This course is designed primarily for mentally and/or physically disabled students who are functioning at very low levels. The course teaches the basic living skills necessary for successful social interaction and self-care to help enhance self-esteem. (4/06)

SLAN-201 BEGINNING SIGN LANGUAGE
Course duration: 36 hours; open entry format.
This course is designed to teach beginning students how to communicate with the hearing impaired. Communication skills are acquired through signed words, gestures, finger spelling, and facial expression. Course instruction includes American Sign Language vocabulary taught concurrently with an overview of all sign systems. There is also minor emphasis on Signing Exact English (SEE). The course will include an overview of deaf culture and the history of deaf education. (5/06)

HEALTH AND SAFETY EDUCATION

PHYC-305 PHYSICAL CONDITIONING
Course duration: 54 hours; open entry format.
This course is designed to help students of varying fitness levels attain optimal fitness levels through physical conditioning and exercise. Course topics may include cardiovascular routines, floor exercise, and stretching. (4/06)

PHYC-308 AQUATIC FITNESS
Course duration: 18-90 hours; open entry format.
This course provides personalized aquatics programs designed to develop and maintain cardiovascular and muscular fitness. The course promotes exercise, through such means as water aerobics, swimming, and water sports, as a way to maintain good health. (3/06)

PHYC-310 FLEXIBILITY AND CARDIOVASCULAR FITNESS
Course duration: 90 hours; open entry format.
This exercise course is designed to improve flexibility and cardiovascular fitness of all major muscle groups. The class provides a well-rounded fitness program that will strengthen, condition, and improve sports performance. Specialized classes are available for badminton, baseball, basketball, football, soccer, softball, tennis, and volleyball. (4/06)

TRNG-324 CIVILIAN HANDGUN SAFETY TRAINING
Course duration: 12 hours; open entry format.
This course is designed to familiarize the student with state laws and local ordinances pertaining to the use of handguns as a means of self-defense. The course provides awareness of laws regarding handgun ownership. The course also provides discussion of the moral aspects of the use of deadly force, even when there is a genuine threat of death or great bodily harm to one's self or others. (4/06)

FAMILY AND CONSUMER SCIENCE

SEW-402 BEGINNING QUILTING
Course duration: 54 hours; open entry format.
This course will teach students the fundamentals of quilting. Students will learn ideas and techniques for creating quilted and patchwork bed covers, wall art, clothing, and other quilted projects. Topics include piecing, appliqué, and other quilting skills. (1/06)

SEW-407 NEEDLECRAFTS AND SEWING
Course duration: 54 hours; open entry format.
This is a course with instruction in knitting, crocheting, stitchery, and sewing. Each student will choose an area of needlework and learn to master the skills for that area. (12/05)

SEW-408 SEWING SPECIALTY FABRICS
Course duration: 54 hours; open entry format.
This course is designed to provide the technical knowledge for specialty fabric construction. Emphasis will be placed on fabric identification and selection, sewing techniques, and an overview of sewing and pressing equipment. (4/06)

EDUCATION COURSES FOR OLDER ADULTS

ARTS-501 PAINTING TECHNIQUES FOR OLDER ADULTS
Course duration: 54 hours; open entry format.
This course provides beginning and intermediate instruction in painting and drawing techniques using a variety of mediums. Classes and topics include drawing, watercolor, charcoal, acrylic, pen, pencil, oil, gourd painting, and fabric painting. (1/06)

ARTS-502 ARTS AND CRAFTS FOR OLDER ADULTS
Course duration: 54 hours; open entry format.
This course provides the fundamentals for designing and creating self-expression through art mediums. Instruction may include fundamentals for woodworking, bonsai, quilting, working with paper and fiber materials, macramé, needlework, stained glass, and beading. (4/06)

ARTS-503A POURED CERAMICS FOR OLDER ADULTS
Course duration: 54 hours; open entry format.
This course is designed to teach students to work with ceramic pieces (greenware) and provide training in different greenware techniques. Students will create ceramic pieces from molds. The class provides the opportunity for creation of individual ceramic projects through the use of a variety of finishing techniques including hand painting, relief work, clay lifting, halo gold, lusters, washes, scrip, and firing. (4/06)

ARTS-503B WHEEL THROW/HAND BUILT CERAMICS FOR OLDER ADULTS
Course duration: 72 hours; open entry format.
This course is designed to teach students to work with clay, creating ceramic pieces utilizing hand building and wheel throwing techniques. Students work with a variety of relief carving and finishing applications, including slip trailing, hand building, use of the potter’s wheel, hand painting, pit firing, raku firing, and high and low fire glazing. (4/06)

ARTS-505 CREATIVE EXPRESSION FOR OLDER ADULTS
Course duration: 54 hours; open entry format.
This course is designed to assist adults in developing and writing their
personal memories or life stories in a manner that will be of interest to families, heirs, and friends. Completed works will be treasured, preserved, and possibly published by the student. (4/06)

ARTS-507A MUSIC THERAPY FOR OLDER ADULTS (BEGINNING)
Course duration: 54 hours; open entry format.
This beginning course provides group instruction in band instruments. The course is designed to teach beginning students to sight read music, develop correct timing, and increase knowledge of a variety of music styles and compositions. Students may be invited to participate in recitals and public performances, depending on their ability. (4/06)

ARTS-507B MUSIC THERAPY FOR OLDER ADULTS (INTERMEDIATE)
Course duration: 54 hours; open entry format.
Limitation on enrollment: Students must demonstrate ability to sight-read music for their instrument.
This course provides experience in performing concert and symphonic band literature. Public performance and exchange concerts are scheduled in addition to class instruction and rehearsals. (4/06)

ARTS-512 SENIOR CHORAL DYNAMICS
Course duration: 54 hours; open entry format.
Limitation on enrollment: Ability to accurately match pitch and correctly follow verbal instructions.
This course is a study of standard choral literature. It emphasizes part-singing, intonation, breath control, vocal development, style, eras, musical devices, etc. The ensemble makes several public concert appearances each year. (4/06)

EDU-508 MATURE DRIVER IMPROVEMENT
Course duration: 8 hours; open entry format.
This course is designed primarily for drivers age 55 and older and includes classroom instruction on safety, road courtesy, improving driving performance, safe driving techniques for emergencies, and general vehicle maintenance. (12/05)

EDU-510 GROWING YOUNGER
Course duration: 54 hours; open entry format.
This course is designed to help older adults maintain and improve the cognitive functions of the brain that tend to diminish as part of the normal aging process. Students will engage in a course of mental "calisthenics" to enhance memory, cognitive skills, creative thinking, and problem solving. Topics include exploration of basic mathematical concepts, ancient and cultural board games, word games, puzzles, anagrams, and probability. (5/06)

PHYC-506 MIND AND BODY FITNESS FOR OLDER ADULTS
Course duration: 36-54 hours; open entry format.
This course is designed to provide a full range of motion with flexibility and stretching that includes activities such as full range of motion in joints, gentle aerobic exercise for heart and lungs, hand weights for strengthening muscles and bones, and floor exercises to tone the muscles of the back, buttocks, and legs. (1/06)

SEW-509 SEWING FOR SENIORS
Course duration: 36-54 hours; open entry format.
This course provides instruction in clothing construction with an emphasis on learning techniques specific to fabrics, pattern analysis, figure analysis, and construction skills. (1/06)

PTG-612 PARENTING SERIES
Parenting is designed to provide quality education and support opportunities to caregivers of children and youth in out-of-home care. The courses will help providers meet the educational, emotional, behavioral, and developmental needs of children in their care. Topics include accessing education and health services; permanency planning and reunification; child development; cultural diversity and sensitivity; parenting skills and positive discipline; and self-esteem. Additional topics are designed to provide caregivers with the skills needed to care for children with medical, learning, and behavioral difficulties.

BUSN-749 MICROCOMPUTERS AND BUSINESS
Course duration: 720 hours; open entry format.
This program is a project-based course designed to develop student entry-level skill proficiency in using stat-of-the-art technology to solve problems. Various simulations reflective of real life experiences will be a major part of the instructional units. (5/07)

BUSN-752 INTRODUCTION TO MICROCOMPUTERS
Course duration: 24 hours; open entry format.
This introductory course is designed for non-Spanish speakers who wish to develop specific conversational skills that are related to their work or community environment. Special words and phrases are taught with an emphasis on basic vocabulary and word recognition skills that will result in improved communication with Spanish speaking customers, patients, and clients. (4/06)

LANG-716 SPANISH IN THE WORKPLACE
Course duration: 54 hours; open entry format.
This course is designed to help prepare students to take the state and/or federal exams for Spanish language interpreters. It provides an introduction to the court system and an overview of the administrative hearing process. Topics also include public speaking, memory development, note taking, and simultaneous interpretation. (5/06)

MED-717 MEDICAL ASSISTING
Course duration: 960 hours; open entry format.
This entry-level course is designed for adult students who desire vocational training in the field of medical assisting. Course instruction includes an overview of the career of medical assisting, knowledge of medical law and ethics, oral and written communication skills, medical terminology, anatomy and physiology, and administrative and clinical office procedures. (5/07)

PTG-612 PARENTING SERIES
Parenting is designed to provide quality education and support opportunities to caregivers of children and youth in out-of-home care. The courses will help providers meet the educational, emotional, behavioral, and developmental needs of children in their care. Topics include accessing education and health services; permanency planning and reunification; child development; cultural diversity and sensitivity; parenting skills and positive discipline; and self-esteem. Additional topics are designed to provide caregivers with the skills needed to care for children with medical, learning, and behavioral difficulties.

SHORT TERM VOCATIONAL
SOCL-761 VOCATIONAL LIFE PLANNING
Course duration: 8 hours; open entry format.
This course is designed primarily for students who are part of the Merced College Independent Living Program (ILP). The course addresses issues and barriers that students will typically encounter while seeking and maintaining employment and success in becoming an independent adult. Course content includes instruction in the areas of education, employment, housing, money management, and daily living skills. (5/06)

SKLS-745 SKILLS FOR SUCCESS (NURSING SUCCESS CAMPS)
Course duration: 72 hours; open entry format.
This support course is designed to provide students the opportunity to enhance the skills needed for success and retention in the nursing program. Intensive review and practical application of content areas related to the nursing program is emphasized. (4/06)

TRNG-768 BUS DRIVER TRAINING/RECERTIFICATION
Course duration: 30 hours; open entry format.
This course is designed to improve the bus driver’s public relations ability and to provide a basic and refresher course instruction on vehicle checkout procedures, first aid, and emergency procedures. This course also includes good driving fundamentals, assessing and adjusting to road conditions, and techniques for safe downhill driving. Defensive driving skills and passenger discipline are addressed. A discussion of new state laws and requirements and an analysis of bus accidents is provided. (12/05)

ENGLISH AS A SECOND LANGUAGE (ESL)
ENG-801 BEGINNING ESL SKILLS
Course duration: 204-255 hours; open entry format.
This course is for preliterate and nonliterate ESL students who have no, or very few, English language skills. Emphasis of the course is on aural/oral skills and visual reinforcement. (3/11)

ENG-802 ADVANCED-BEGINNING ESL SKILLS
Course duration: 204-255 hours; open entry format.
Advisory: ENG-801.
This course is for preliterate and nonliterate ESL students who have minimal English language skills. Emphasis in this course is on aural and oral skills with visual reinforcement. The student will be introduced to reading, writing and math skills. (3/11)

ENG-803 ESL (ENGLISH AS A SECOND LANGUAGE) LEVEL 3
Course duration: 324 hours; open entry format.
Advisory: ENG-802.
This course is for beginning level students who are familiar with the printed and written alphabet but have minimal ability to use English. This course includes practice in listening, speaking, reading, and writing English on a beginning level. (3/06)

ENG-804 ESL (ENGLISH AS A SECOND LANGUAGE) LEVEL 4
Course duration: 324 hours; open entry format.
Advisory: ENG-803.
This course is designed for high-beginning level students who need more practice with English skills. This course includes practice in listening, speaking, reading, and writing on an advanced beginning level. (3/06)

ENG-805 ESL (ENGLISH AS A SECOND LANGUAGE) LEVEL 5
Course duration: 324 hours; open entry format.
Advisory: ENG-804.
This course is for low-intermediate students who need practice and expansion of their communication skills. This course includes practice in listening, speaking, reading, and writing on a low to intermediate level. (3/06)

ENG-806 ESL (ENGLISH AS A SECOND LANGUAGE) LEVEL 6
Course duration: 324 hours; open entry format.
Advisory: ENG-805.
This course is for high-intermediate ESL students who have learned basic survival skills, but who need instruction that will lead to a relatively sophisticated level of discourse of issues and ideas that reach beyond basic survival. This course will prepare students to take credit courses at Merced College. This course includes practice in listening, speaking, reading, and writing. (3/06)

ENG-813 LOW-INTERMEDIATE ESL SKILLS
Course duration: 204 - 255 hours.
Advisory: ENG-802.
This course is designed for low-intermediate level students who need more practice with English skills. This course includes practice in listening, speaking, reading, and writing. (3/11)

ENG-815 INTERMEDIATE ESL SKILLS
Course duration: 204 - 255 hours.
Advisory: ENG-813.
This course is for intermediate level students who have learned basic survival skills, but who need instruction that will lead to a relatively sophisticated level of discourse of issues and ideas that reach beyond basic survival. This course will prepare students to take credit courses at Merced College. This course includes practice in listening, speaking, reading, and writing. (3/11)

IMMIGRANT EDUCATION
HST-908 UNITED STATES CIVICS
Course duration: 25 hours; open entry format.
This course is designed to prepare students to meet the United States history, government, and English requirements necessary to become a United States citizen. The course covers the symbols and beliefs of the United States; federal, state, and local government; the Constitution; the Bill of rights; U.S. history, and a review of the interview and testing process required by the immigration services. (4/07)
AKERS-PORTER, TINA
Mathematics
A.S., Modesto Junior College;
B.A., California State University, Stanislaus;
M.S., Missouri State University

ALBANO, VALERIE
Biology
B.S., University of Washington;
Ph.D., University of Southern California

ALCALA, RAUL
Counselor, ASMC Coordinator
B.A., M.A., California State University, Fresno

ARGUELLES, MARCUS
Anthropology, Archaeology
A.A., Merced College; B.A., San Jose State University;
M.A., American University of Beirut

BAKER, WILLIAM
English
B.A., University of California, Davis;
M.A., University of Illinois

BARBA, MICHAEL
English
A.A., Modesto Junior College;
B.A. Humboldt State University;
M.A., University of Massachusetts

BARNETT, CHERYL
Art
B.A., University of California, Santa Cruz;
M.A., California State University, Fresno

BARRY, JEAN
Counseling
A.A., Merced College
B.P.A., M.A., University of San Francisco
Ed. D, Argosy University

BELL, STEPHEN
Plant Science, Soil Science
A.A., Merced College;
B.S., M.S., California Polytechnic State University, San Luis Obispo

BENHISSEN, LOUISA
Art
B.F.A., M.F.A., Laguna College of Art & Design

BENNETT, CHARLIE
Counseling
A.A., Merced College;
B.A., M.S., University of Colorado

BONSTEIN, JAMES
Communication Studies
A.A., Long Beach City College;
B.A., M.A., California State University, Long Beach

BOYLE, STEVEN
Metal Fabrication
A.A., Merced College;
B.A., California State University, Fresno

BRULEY, MARIE
Mathematics
B.S. California State University, Stanislaus;
M.A. California State University, Sacramento

BRUSH, EDWIN
Associate Librarian
A.A., Modesto Junior College;
B.A., California State University, Stanislaus;
M.L.S., San Jose State University

BRYAN, JAMES K.
Mathematics
A.A., Fresno City College
B.A., M.A., California State University, Fresno

BRZEZINSKI, JAMES
Art
A.A., College of the Redwoods
B.A., Humboldt State University
M.F.A., California College of Arts and Crafts

CAINE, ERIC
English
B.A., University of California, Berkeley;
M.A., California State University, Stanislaus

CALITRI, ROBIN
English
B.A., California State University, Stanislaus;
M.A., California State University, Fresno

CAMBRIDGE, ISABEL
Counseling
B.A., University of California, Los Angeles;
M.S., San Diego State University

CASEY, JESSICA
Head Coach, Women’s Volleyball
A.A., Otero Junior College;
B.S. Huron University

CAZARES, KITTY
Nursing
A.A., A.S., Merced College;
B.S., California State University, Stanislaus
M.S., University of Phoenix
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<th>Name</th>
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<td>CHAPPELL, SUSAN</td>
<td>Child Development</td>
<td>A.A., Modesto Junior College; B.A., California State University, Stanislaus; M.A., Pacific Oaks College, Pasadena</td>
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<td>Clark, Julie</td>
<td>Mathematics</td>
<td>B.A., M.A., California State University, Fresno</td>
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<td>Clark, Steve</td>
<td>Counseling</td>
<td>A.S., Santa Rosa Junior College; B.S., The Evergreen State College; M.S., California State University, Sacramento</td>
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<td>Clifford, Jeanie</td>
<td>Psychology</td>
<td>B.A., M.A., San Diego State University; Ph.D., University of California, San Diego</td>
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<td>Coahran, Scott</td>
<td>Psychology/Sociology</td>
<td>B.A., M.A., Johns Hopkins University; M.A., Arizona State University</td>
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<td>Coburn, Cary</td>
<td>Biology</td>
<td>A.A., Merced College; B.S., M.S., California State University, Chico; Ph.D., University of California, Riverside</td>
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<td>Col-Hamm, Caren</td>
<td>Nursing</td>
<td>B.S.N., Alfred University; M.S.N., Hunter College</td>
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<td>Colomer-Flores, Mara</td>
<td>Spanish</td>
<td>B.A., M.A., California State University, Fresno</td>
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<td>Constantinescu, Eugen</td>
<td>Industrial Technology, Electronics, Drafting</td>
<td>B.S., M.A., Polytechnic Institute of Bucharest, Romania</td>
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<td>Cox, Deborah</td>
<td>Counselor</td>
<td>A.A., Merced College; B.S.; M.S., University of San Francisco; M.A., St. Mary’s College</td>
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<td>Crombie, Karen</td>
<td>Biological Sciences</td>
<td>B.A., M.A., California State University, Fresno</td>
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<td>Cuarenta-Gallegos, Gabriel</td>
<td>Mathematics</td>
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<td>Daughdrill, Josh</td>
<td>English</td>
<td>B.A., Humboldt State University; M.A., California State University, Stanislaus</td>
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<td>Davies, Robert</td>
<td>Physical Sciences</td>
<td>B.S., Sonoma State University; M.S., San Francisco State University</td>
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<td>Davis, G. Lyle</td>
<td>Counseling, Cooperative Education</td>
<td>A.A., Merced College; B.S., M.S., California State University, Fresno; M.A., University of San Francisco</td>
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<td>Dawson, Caroline</td>
<td>Mathematics</td>
<td>B.S., M.B.A., California State University, Stanislaus; M.A., Fresno Pacific University</td>
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<td>Dawson, Denisha</td>
<td>Chemistry</td>
<td>B.A., University of California, Santa Cruz; Ph.D., University of California, Berkeley</td>
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<td>Devine, Nathan</td>
<td>Physical Education/Assistant Baseball Coach</td>
<td>B.S., M.B.A., University of La Verne</td>
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<td>Dillon, Dallas E.</td>
<td>English</td>
<td>B.A., Baker University; M.A., St. John’s University; Ph.D., Indiana University of Pennsylvania</td>
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<td>Doiel, Mark</td>
<td>Music History and Theory, Piano</td>
<td>A.A., College of the Canyons; B.F.A., M.F.A., California Institute of the Arts</td>
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<td>Donaher, Kimberly</td>
<td>Agriculture Business</td>
<td>A.S., Modesto Junior College; B.S., M.S., California Polytechnic State University, San Luis Obispo</td>
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<td>Donnelly, Bryan</td>
<td>Fire Technology</td>
<td>B.S., University of San Francisco; M.A., St. Mary’s College of California</td>
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<td>Donnelly, Shelley</td>
<td>Radiologic Technology</td>
<td>Clinical Coordinator of Diagnostic Radiologic Technology; A.S., Merced College; B.S., Florida Hospital College of Health Science</td>
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<td>Dunn, Paul</td>
<td>Diesel Mechanics</td>
<td>A.A., Merced College; Diesel Equipment Mechanics Experience</td>
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ENRIQUEZ, MICHAEL
A.A., El Camino College
B.S., Loma Linda University;
M.P.A., Golden Gate University

ESTRELLA, CARL
Biology
A.A., Long Beach City College;
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FALAH, AMIR
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M.A., University of San Francisco

FALKOWSKI, DAVID
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B.S., Eastern Michigan University

FARAO, JAIME
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FERGUSSON, LOU
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A.A., Chabot College;
B.A., M.S., California State University, Hayward

FISHMAN, DAROL
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M.S., California Polytechnic State University, San Luis Obispo

FLATT, SUSAN
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M.A., California Polytechnic State University, San Luis Obispo

FREGÈNE, PAUL
Chemistry
B.S., M.S., University of Ibadan, Nigeria
Ph.D., State University of New York, Binghamton

FRIEZ, KAREN
Business/Management
B.S., University of North Carolina;
M.B.A., University of Georgia;
Ed.D, East Tennessee State University

GARCIA, CRISTINA
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B.A., California State University, Stanislaus
M.A., San Jose State University

GARZANO, GARY
Psychology
A.A., Cuesta College
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Ph.D., Washington State University

GARGOVA, SVETLA
Engineering, Mathematics
M.S., Technical University, Sofia, Bulgaria

GILARDI, MICHELLE L.
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B.S., M.S., California State University, Fresno

GOLZ, NANCY
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B.A., Fresno Pacific University
M.S., Clarion University, Clarion, PA

GONZÁLEZ, HEATHER
English
A.A., Riverside Community College
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M.A., University of California, Riverside

GREGORY, AARON
Automotive Technology
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GREGORY, BOBBY
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M.S., California College for Health Sciences

HALLMAN, MAX
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B.A., M.A., University of South Carolina;
Ph.D., Tulane University

HALPIN, WILLIAM
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B.S., Fresno College;
M.A., Chapman University

HAUGEN, ANNETTE
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M.B.A., California State University, Stanislaus

HEIDELBACH, CARIN
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B.A., California State University, Stanislaus
M.F.A., Humbolt State University

HENNINGSGAARD-VIERRA, JILL
Counseling
A.A., Merced College
B.A., California State University, Stanislaus
M.S., California State University, Fresno
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<td>Hicks, Travis</td>
<td>Philosophy</td>
<td>B.A., University of St. Thomas; M.A., Loyola Marymount University</td>
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<td>Hobbs, Lee Anne</td>
<td>Communication Studies</td>
<td>B.A., University of California, Davis; M.A., California State University, Fresno</td>
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<td>Hoornaert, Donald J.</td>
<td>Automotive Technology</td>
<td>A.A., Diablo Valley Junior College; B.A., M.A., California State University, Fresno</td>
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<td>Huddleston, Allen</td>
<td>Head Coach, Women’s Basketball; Physical Education</td>
<td>A.A., Merced College; B.A., California State University</td>
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<td>Hundlely, Amy</td>
<td>English</td>
<td>B.A., M.A., University of California, Irvine</td>
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<td>Huntington, Pamela L</td>
<td>English with Emphasis in Reading</td>
<td>A.A., American River College; B.A., M.A., University of California, Davis</td>
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<td>Igo, Megan M.</td>
<td>Biology</td>
<td>B.S., University of California, Riverside; M.S., University of California, Los Angeles</td>
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<td>Joahl, Amerjit</td>
<td>History</td>
<td>B.A., California State University, Chico; M.A., University of California, Los Angeles</td>
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<td>Johnson, Michael</td>
<td>Economics</td>
<td>B.S., M.B.A., Idaho State University</td>
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<td>Jordan, Lana</td>
<td>Mathematics, Physics</td>
<td>B.A., University of the Pacific; M.A., California State University, Stanislaus</td>
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<td>Kahlert, Shirley</td>
<td>English</td>
<td>B.A., California State University, Hayward; M.A., San Francisco State University; Ph.D., University of California, Los Angeles</td>
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<td>Kanemoto, Kathleen D.</td>
<td>Computer Science/Computer Applications</td>
<td>B.S., M.S.E., M.B.A., San Jose State University</td>
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<td>Kehoe, Julie</td>
<td>Mathematics</td>
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<td>Keller, Susan</td>
<td>Anatomy, Physiology</td>
<td>B.S., University of California, Riverside; M.A., California State University, Fresno</td>
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<td>Kimoto, Susan</td>
<td>English</td>
<td>B.A., University of California, Santa Cruz; M.A., San Francisco State University</td>
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<td>Kline, Susan</td>
<td>Office Technologies, Computer Applications, Business</td>
<td>A.A., A.S., Mt. San Jacinto College; B.S., M.A., Azusa Pacific University</td>
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<td>Kreide, Caroline</td>
<td>German, Spanish</td>
<td>B.A., State University of New York; M.A., Pennsylvania State University; Ph.D., University of California, Berkeley</td>
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<td>Lacey, Vararie</td>
<td>Counseling</td>
<td>B.S., Morris College; M.A., Ball State University</td>
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<td>Lankford, Taylor</td>
<td>English as a Second Language</td>
<td>A.A., Modesto Junior College; B.A., M.A., University of California, Davis</td>
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<td>Latham, Eldon R.</td>
<td>Microbiology</td>
<td>B.S., M.S., California State University, Chico</td>
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<td>Law, Keith</td>
<td>Humanities, Philosophy</td>
<td>B.A., California State University, Hayward; M.A., San Francisco State University</td>
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<td>Lenz, Robert B.</td>
<td>Counseling</td>
<td>A.A., Merced College; B.A., University of California, Irvine; M.A., San Francisco State University</td>
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<td>Leonard, Brandon J.</td>
<td>Mathematics</td>
<td>B.A., M.A., California State University, Fresno</td>
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<td>Lewis, Anthony</td>
<td>Counseling</td>
<td>A.A., Merced College; B.S., California State University, Hayward; M.A., University of San Francisco</td>
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<tr>
<td>Long, John</td>
<td>English</td>
<td>B.A., M.A., California State University, East Bay</td>
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</table>
LOR, SUTARA  
Counseling  
B.S., DeVry Institute of Technology  
M.A., Concordia University;  
M.S., National University  

LORENZ, MICHAEL  
History  
B.A., Pacific Union College;  
M.A., California State University, Stanislaus  

MACIAS, MIREYA  
Biology  
A.S., Merced College;  
B.S., University of California, Davis;  
M.S., California State University, Fresno  

MAYER, JILL  
Addiction Studies, Corrections, Criminal Justice, Fire Technology  
A.A., Merced College;  
B.A., St. Martin’s College;  
M.S.W., California State University, Fresno  

McBRIDE, JENNIFER  
English  
A.A., Merced College;  
B.A., M.A., California State University, Sacramento  

McCALL, SCOTT  
Head Coach, Men’s Water Polo and Swimming  
A.S. Merced College;  
B.S. University of Massachusetts, Amherst;  
M.S. California State University, Long Beach  

McCANDLESS, MICHAEL  
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B.A., University of California, Santa Barbara;  
M.A., California State University, Stanislaus  

McDONALD, TRAVIS  
Mathematics  
B.A., M.A., California State University, Fresno  

McMILLAN, WENDY  
Counseling  
A.A., Palomar College;  
B.A., California State University;  
San Diego; M.S., National University  

MEIDINGER, MAI  
Mathematics  
B.A., California State University, Fullerton;  
M.S., University of Arizona  

MEIDINGER, STEPHAN  
Mathematics  
A.A., Rancho Santiago College;  
B.A., M.A., California State University, Fullerton  

MERRITT, JOSELEE  
Reference Librarian  
B.A., Westmont College;  
M.L.I.S., San Jose State University  

MITCHELL, PATRICK T.  
Mathematics  
B.A., The College of New Jersey;  
M.S., University of Delaware  

MODAFFERI, EDWARD  
Microbiology  
B.A., University of California, Santa Barbara;  
Ph.D., University of California, Los Angeles  

MONToya, JOHN  
Mathematics  
B.S., California State University, Stanislaus;  
M.A., Fresno Pacific University  

MORIMOTO, DEBRA  
Geography  
A.A., Cypress Community College;  
B.A., California State University, San Bernardino;  
M.S., Brigham Young University  

MORRIS, RALPH  
Political Science, History  
A.A., Merced College; B.A., University of California, Berkeley;  
M.P.A., California State University, Hayward;  
M.A., San Francisco State University  

MUMFORD, JEREMY  
English  
B.A., M.A., M.F.A., California State University, Fresno  

MURPHY, JOEL  
Psychology  
A.S. Community College of the Air Force;  
B.A., M.S. California State University Stanislaus  

NAGANO, JEFFREY  
HVAC, Industrial Maintenance  
Industrial Technology Experience  

NAVARES, DESMOND  
Mathematics  
B.A., California State University, Sacramento;  
M.S., California State University, Hayward  

NEAR, DELIA  
Reference Librarian  
B.A., University of California, Riverside;  
M.L.S., University of California, Berkeley  

NELSON, CURTIS  
Music, Chorus  
B.M., University of Saskatchewan, Canada;  
M.C.M., Western Conservative Baptist Seminary  

NICOLL-JOHNSON, MARK  
English  
A.B., Occidental College;  
M.A., University of Oregon
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<th>Name</th>
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<td>NORRIS, SUZETTE</td>
<td>Criminal Justice</td>
<td>A.A., Merced College; B.A., Chapman University</td>
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<td>ORTIZ, KERI</td>
<td>English</td>
<td>A.S., Merced College; B.A., California State University, Fresno; M.A., Chapman University</td>
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<td>PECCHENINO, MICHELLE</td>
<td>Nutrition</td>
<td>A.A., Merced College; B.S., California Polytechnic State University, San Luis Obispo; M.A., University of San Francisco</td>
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<td>PEDRAZZI, KATHERINE</td>
<td>Vocational Nursing</td>
<td>A.S., Modesto Junior College; B.S., Regis University</td>
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<td>PEDRETTI, CHRISTOPHER</td>
<td>Head Baseball Coach; Physical Education</td>
<td>A.A., Merced College; B.S., San Jose State University; M.A., University of San Francisco</td>
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<td>PENNEY, BARBARA</td>
<td>Child Development</td>
<td>B.A., University of California, Santa Barbara; M.A., California State University, Los Angeles</td>
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<td>PERLIN, ALANA</td>
<td>Digital Art/Graphic Design</td>
<td>B.A., University of California, Los Angeles; M.F.A., University of California, Santa Cruz</td>
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<td>PIMENTEL, MYSHEL</td>
<td>English</td>
<td>A.S., Merced College; B.S., M.A., California State University, Fresno; Ed.D., California State University, Stanislaus</td>
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<td>PIRO, VINCENT</td>
<td>English</td>
<td>B.A., M.A., San Jose State University</td>
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<td>PISTORESI, JONAE</td>
<td>Business, Management</td>
<td>B.S.C., University of Santa Clara; M.B.A., Golden Gate University</td>
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<td>PROVENCIO, GLORIA</td>
<td>Nursing</td>
<td>A.A., Merced College; B.S.N., California State University, Stanislaus; M.S.N., California State University, Fresno</td>
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<td>RANDALL, RICHARD</td>
<td>Political Science</td>
<td>A.A., Modesto Junior College; B.A., California State University, Stanislaus; M.A., University of California, Davis</td>
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<td>REINTKE, TONI</td>
<td>Computer Applications, Office Technologies</td>
<td>Bachelor’s equivalent, Bournemouth University, England; M.S., Eastern Illinois University</td>
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<tr>
<td>RENTERIA, ENRIQUE</td>
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<tr>
<td>RETEMEYER, JIM</td>
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</tr>
<tr>
<td>RODUNER, STACEY</td>
<td>Child Development</td>
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<tr>
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<tr>
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<tr>
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<tr>
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<tr>
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</tr>
<tr>
<td>SEVERO, SALVADOR</td>
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</tr>
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</table>
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