

MERCED
COLLEGE



Merced College Program Investigation Committee: Biotechnology

Prepared by the Office of Institutional Effectiveness
Tuesday, March 17, 2026





Overview

- Program Investigation Policy (Title 5, AP)
- Program Description
- Outcomes
- Interest
- Comparable programs



Program Investigation Policy

- [Title 5, § 51022](#) (a): “The governing board shall adopt and carry out its policies for the establishment, modification, or discontinuance of courses or programs.”
- [MCCCD AP 4021](#)
 - Discussion of program discontinuance must include all stakeholders potentially affected by the decision.
 - Three potential outcomes of the Program Discontinuance process:
 - **Continue** (including listing intervention strategies to support program)
 - **Continue with qualification** (may include introducing a certificate of completion, substantial change)
 - **Discontinue** (including plan to address impacted stakeholders and timelines)
 - Co-chairs will produce a written report, including research findings and recommendations
 - Academic Senate makes final determination, followed by any appropriate curricular action by the Curriculum Committee



Program Investigation Policy

- [MCCD AP 4021](#) (*Excerpt*):

- **Quantitative Indicators**

- The list of quantitative indicators is long. Any and/or all of these quantitative indicators need to be reviewed to inform the discussion on program discontinuance. **They include, but are not limited to:**
 1. The projected demand for the program in the future.
 2. The persistence of students in the program.
 3. Weak enrollment trends over a sustained period of time.
 4. Insufficient frequency of course section offering
 5. Poor term to term persistence (significantly below the college average) of students within the program.
 6. Poor retention or success rates (significantly below the college average) of students.
 7. Productivity in terms of the FTEs (actual) per FTEF ratio (the version of WSCH/FTE that takes enrollment activity for all attendance types into consideration).
 8. Number of graduates from the program (where applicable).
 9. Diversity issues: For example, has the ethnic distribution of department enrollees become more reflective of the overall student body over time?
 10. When the discipline is being considered for termination: The decline in importance of service to those in related programs must be considered.



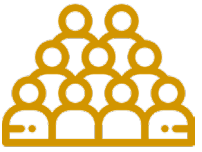
Biotechnology Program

“Biotechnology is a broad sector that includes companies that use science to develop products that save or improve lives or the environment. These companies can operate in the agricultural, pharmaceutical, medical device & equipment, or distribution arena.” - CCCO

- Currently, in the [2025-26 Catalog](#)
 - There are three 30-32 unit programs
 - [Biotechnology-Industry \(AS\)](#) (04135.AS) – 27 units in Program Core
 - [Biotechnology Pre-Professional \(AS\)](#) (04137.AS) – 30 units in Program Core
 - [Biotechnology \(CN\)](#) (04130.CN) – 17 units in Program Core

Course	Title	Course Frequency	BioT: Industry (AS)	BioT: PrePro (AS)	BioT (CN)
BIOL-09	Intro to Genetics (3)	Primary Terms	X	X	X
BIOL-20	Microbiology	All Terms		X	
BIOL-32	Intro to Biotech (4)	2018F	X	X	X
BIOL-32L	Intro to Biotech Lab (2)	2018F	X	X	X
BIOL-33	Biotech II: Advanced Lab Techniques + Theory (4)	2019S	X	X	X
CHEM-02B	Intro to Chem: Intro to Organic + Biochemistry (4)	Primary Terms	X		X
CHEM-04A	General Chem I (5)	All Terms		X	
CHEM-04B	General Chem II (5)	Primary Terms		X	
Additional units			10	3	-





PSLOs – Biotechnology, Industry (AS) (04135.AS)

- [Biotechnology, Industry \(AS\) \(04135.AS\)](#)

Students will demonstrate...

- ...the use and maintenance of equipment found in a standard biotechnology lab.
- ...the application and comprehension of laboratory math skills where appropriate.
- ...an understanding of the underlying theory of laboratory skills and work ethic through application, problem-solving skills and teamwork.
- ...the preparation, comprehension, evaluation, and maintenance of standard documents associated with the biotechnology workplace.
- ...the comprehension and interpretation and application of federal, state, and local safety regulations within the biotechnology workplace with regards to the quality control of products generated in the laboratory.



PSLOs – Preprofessional (AS) (04137.AS) + CT (04130.CN)

- Biotechnology, Preprofessional (AS) (04137.AS)

- A. Demonstrate the comprehension and application of laboratory math skills where appropriate.
- B. Demonstrate a comprehension of biotechnology theory through the application of basic biotechnology laboratory skills, problem solving skills, work ethic and teamwork.
- C. Demonstrate the ability to prepare, comprehend, evaluate, and maintain standard documents associated with the biotechnology workplace.
- D. Demonstrate an understanding of federal, state, and local safety regulations and through their application in the biotechnology workplace.
- E. Demonstrate an understanding of federal, state and local regulations as they relate to quality control of products produced in the laboratory.

- Biotechnology, Industry (AS) (04135.AS)

- A. Students will be able to use equipment found in a standard biotechnology lab.
- B. Demonstrate the application and comprehension of laboratory math skills where appropriate.
- C. Demonstrate the preparation, comprehension, evaluation, and maintenance of standard documents associated with the biotechnology workplace.
- D. Students will demonstrate problem-solving skills in the biotechnology laboratory.
- E. Students will demonstrate an appropriate work ethic and demonstrate teamwork skills.



Outcomes: Biotechnology Courses (2002-2020)

Biotechnology Course	Item	Before 2010-11	2011-12	2014-15	2015-16	2016-17	2017-18	2018-19
BIOL-32 Intro to Biotech	Enrollment	-	-	11	14	12	-	12
	N of Sections	-	-	1	1	1	-	1
	CCR	-	-	81.82%	100.00%	100.00%	-	91.67%
	CSR	-	-	63.64%	85.71%	75.00%	-	75.00%
	FTES	-	-	1.47	1.87	1.33	-	1.47
BIOL-32L Intro to Biotech Lab	Enrollment	-	-	11	11	7	-	5
	N of Sections	-	-	1	1	1	-	1
	CCR	-	-	81.82%	100.00%	100.00%	-	80.00%
	CSR	-	-	63.64%	81.82%	71.43%	-	80.00%
	FTES	-	-	2.20	2.20	1.20	-	1.00
BIOL-33 Biotech II: Advanced Lab Techniques + Theory	Enrollment	63	12	7	9	-	1	5
	N of Sections	9	2	1	1	-	1	1
	CCR	98.41%	91.67%	100.00%	100.00%	-	100.00%	80.00%
	CSR	93.65%	91.67%	100.00%	100.00%	-	100.00%	80.00%
	FTES	13.40	1.60	1.87	2.40	-	0.13	1.33

Have not been offered in over six years.



Outcomes: Biotechnology Courses (2016S-2021S): 2+2

Biotechnology Course	Item	2016S	2017S	2018S	2019S	2020S	2021S	Total
BIOL-32 Intro to Biotech	Enrollment	3	15	11	15	41	32	117
	CCR	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	CSR	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
BIOL-32L Intro to Biotech Lab	Enrollment	3	14	10	12	40	32	111
	CCR	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
	CSR	100.00%	100.00%	100.00%	100.00%	100.00%	93.75%	98.20%

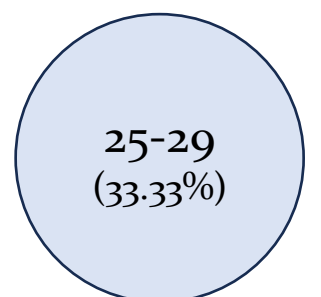
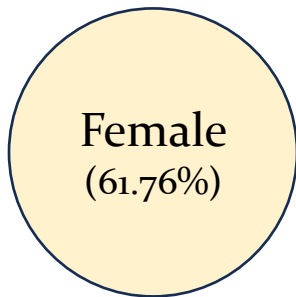
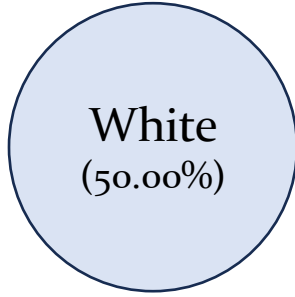
- Represents 118 unique students

Outcomes: Biotechnology Awards (2002-2020)

	Before 2010-11	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Biotechnology (AS)	30	6	1	2	0	0	0	1	1	0	0	41
Biotechnology (CB)	0	0	0	0	0	0	1	2	0	1	1	5
Biotechnology (CC)	4	2	0	0	0	0	0	0	0	0	0	6
Biotechnology (CL)	0	0	1	1	0	0	0	0	0	0	0	2
Biotechnology-Industry (AS)	0	0	0	0	0	2	4	4	0	0	0	10
Total	34	8	2	3	0	2	5	7	1	1	1	64

BIOT Awardee Demographics

- 64 duplicate Biotechnology-related awards, representing 56 unique students
- 19 students earned a separate award, totaling 38
 - 5 in Biological Science (AS), Health Science (AA)
 - 4 in Natural Sciences (AA)
 - 2 in Chemistry (AS), Life Science (AA), Rad Tech (AS/CF), Registered Nursing (AS)
 - 1 in other areas, including STEM (BIOL, CHEM, MATH), Social Science (ANTH, PSYC), CTE (AOM, VIRT)
 - Timeframe: 2002S-2020F





Interest at MCCD

- In examining CCCApply Application data:

Award Type	CY 2022	CY 2023	CY 2024	CY 2025
Biotechnology (CB)	6	10	5	0
Biotechnology (CN)	0	0	31	51
Biotechnology-Industry (AS)	4	6	26	18
Biotechnology-Pre Professional (AS)	57	54	34	15
Total	67	70	96	84

- As of Monday, 02 March 2026
- Represents 270 unique students





Comparable Programs

- 30 California Community Colleges (CCC) have an active biotechnology-related program with a 0430.00 TOP Code (Biotechnology and Biomedical Technology)
 - Gavilan has it under 0401.00 (Biology)
 - LA Mission has it under 4930.87 (ESL) (ESL Pathway to Biotechnology Careers)
- No CV CCC – Closest colleges are ARC (Sacramento), Gavilan (Gilroy), Cabrillo (Santa Cruz)
- Most common programs are for lab assistant (15 colleges) or technician (7 colleges)
- 4 CCCs offer a 4-year degree in biotechnology/biomanufacturing

Biotechnology Awards (Top Code: 0430.00) (2019-20 to 2024-25)						
	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
	549	471	528	592	718	651
BS Degree	37	39	51	41	33	46
AS Degree	147	155	175	166	164	116
AA Degree	8	1	1	1	1	3
CT (30 to < 60 units)	76	58	49	54	46	52
CT (16<30 units)	67	67	66	129	145	139
CT (8<16 units)	106	77	127	161	207	244
CT (6 to < 18 units)	108	74	57	40	122	51
NC CT (288 to < 480 hours)	0	0	2	0	0	0
Total	1,098	942	1,056	1,184	1,436	1,302





Next Steps

- Members can request additional information, as appropriate
- For LMI: Identify the SOC code(s) that best matches:
 - 19-4021 Biological Technicians
 - 17-3029 Engineering Technicians, Except Drafters, All Other
 - 49-9062 Medical Equipment Repairers
- The final determination as to the viability of the Electronics Technician Program at Merced College lies with the Program Investigation committee.
 - **Continue** (including listing intervention strategies to support program)
 - **Continue with qualification** (may include introducing a certificate of completion, substantial change)
 - **Discontinue** (including plan to address impacted stakeholders and timelines)
- Discussion of program discontinuance must include all parties potentially affected by the decision including faculty, staff, administrators, students, potential employers, and the community.
- OIE is continuously trying to improve its data/information-sharing approaches. Contact research@mccd.edu to follow-up.