

BIOLOGY: MICROBIOLOGY OPTION

Bachelor of Science Degree Requirements – 120 units

Cal State LA | Department of Biological Sciences | 323.343.2050 | Office: BIOS 143

Name:	Career Goal:	Date:
CIN:	GE Catalog (Sem./Yr.):	Major Catalog (Sem./Yr.):
Phone:	Student Signature:	
Email:	Advisor Signature:	

GENERAL EDUCATION REQUIREMENTS (48 units)

A: Communication and Critical Thinking (9 units) [T] or Sem./Yr. Grade

A1: Oral Communication		
A2: Written Communication		
A3: Critical Thinking & Composition		

Minimum of C grade required for all courses in Block A. [T]=transfer work.

American Institutions (6 units)

US History		
US Constitution/California State & Local Government*		

*transfer students or students applying AP credit who have completed the US Constitution but not the State & Local Gov. requirement may take POLS 2000

B: Natural Sciences and Mathematics (9 units)

either CHEM 1100 or PHYS 1100 + BIOL 1100 + MATH 2045 satisfy Blocks B1 + B2 + B4

B1: Physical (with lab)	CHEM 1100 or PHYS 1100	
B2: Biological (with lab)	BIOL 1100	
B3: Interdisciplinary (with lab)		
*B4: Quantitative Reasoning & Mathematical Concepts	MATH 2045	

* Minimum of C grade required

C: Arts & Humanities (6 units)

C1: Arts		
C2: Humanities		

D: Social Sciences (6 units; from 2 different disciplines)

E: Lifelong Understanding (3 units)

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NSS 1001 fulfills lower-division CL & both block E and IHE requirements

Upper Division GE Courses

(9 units; 1 course must include CL designation)

Natural Sciences & Quant. Reasoning		
Arts & Humanities		
Social Science		

Courses listed or cross-listed with major cannot be taken to satisfy UD GE requirements.

UNIVERSITY REQUIREMENTS (15 units;

can be fulfilled with courses from Blocks C, D, E or Upper Division GE)

(wi) Writing Intensive:BIOL3200 + 1 course		
(CL) Civic Learning/Community Engagement		
(IHE) Intro to Higher Ed. + Civic Learning		
(re) Race/Ethnicity focus		
(d) Diversity focus [or take second (re)]		

MAJOR REQUIREMENTS (81 units)

Required Courses (75 units) [T] or Sem./Yr. Grade

BIOL 1100* Cellular Basis of Life	(5)		
BIOL 1200* Diversity of Life	(5)		
BIOL 3000* Biostatistics	(4)		
BIOL 3200* Professional Writing in the Life Sciences (wi)	(3)		
BIOL 3400* Principles of Genetics	(3)		
BIOL 3500* Evolution	(3)		
BIOL 3600* Functional Biology	(3)		
CHEM 1100 General Chemistry I	(5)		
CHEM 1110 General Chemistry II	(5)		
CHEM 2200 Organic Chemistry I**	(4)		
CHEM 2201 Organic Chemistry Lab**	(1)		
CHEM 3200 Organic Chemistry II**	(4)		
MATH 2045 Calculus for the Life Sciences	(5)		
MICR 3100 General Microbiology	(4)		
MICR 3300 Microbial Genetics	(3)		
MICR 3500 Bacterial Physiology	(3)		
MICR 3700 Medical Microbiology	(4)		
MICR 3900 Applied and Environmental Microbiology	(3)		
PHYS 1100 Physics A	(4)		
PHYS 1200 Physics B	(4)		

*Minimum grade of C or higher required

**or one year of organic chemistry with at least one term of lab from an accredited 2- year or 4-year college or university; NOTE: BIOL AP score of 4 or 5 fulfills BIOL 1100 requirement. Submit all AP scores to ADM 409.

[T] = transfer work

Upper Division Electives (6 units)

Provide course # & units only after enrollment.

Sem./Yr. Grade

MICR course from approved list (at least 3 units)		
Additional electives (3 units of MICR electives or from the approved department list)		

Please check when completed when applying for graduation.

Overall GPA ≥ 2.000:	
CSULA GPA ≥ 2.000:	
Major GPA ≥ 2.000:	
UD units ≥ 40:	
Units completed at CSULA ≥ 30:	
UD units completed at CSULA ≥ 24:	
Units in major completed at CSULA ≥ 12:	
Units in GE completed at CSULA ≥ 9:	
Total units completed ≥ 120:	

BIOLOGY: MICROBIOLOGY OPTION**PREREQUISITES & CO-REQUISITES FOR REQUIRED COURSES**

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REQUIRED COURSES				PREREQUISITES & CO-REQUISITES
BIOL	1100	Principles of Biology I	(5)	Co-requisite: MATH 1081 or MATH 1040 or equivalent.
BIOL	1200	Principles of Biology II	(5)	Prerequisite: BIOL 1100 with grade of C or better; co-requisite: MATH 1085 or MATH 1083 or MATH 1040 or equivalent.
BIOL	3000	Biostatistics	(4)	Prerequisites: Grade of C or better in BIOL 1200; MATH 1085 or MATH 1083 or MATH 1040 or equivalent.
BIOL	3200	Professional Writing for the Life Sciences	(3)	Prerequisite: ENG 1050 or equivalent; co-requisite: BIOL 3000.
BIOL	3400	Genetics	(3)	Pre/co-requisite: BIOL 3000.
BIOL	3500	Evolution	(3)	Prerequisite: BIOL 3400.
BIOL	3600	Functional Biology	(3)	Prerequisite: BIOL 1200 OR CHEM 2300.
CHEM	1100	General Chemistry I	(5)	Prerequisite: Completion of GE B4, or on Math Placement Category I or II (GE Math supported instruction is not required).
CHEM	1110	General Chemistry II	(5)	Prerequisite: CHEM 1100 with minimum C- grade.
CHEM	2200	Organic Chemistry I	(4)	Prerequisite: CHEM 1110 or 1 year of General Chemistry with minimum C- grade.
CHEM	2201	Organic Chemistry Lab	(1)	Prerequisite: CHEM 1110 with minimum C- grade; pre/co-requisite: CHEM 2200
CHEM	3200	Organic Chemistry II	(4)	Prerequisite: CHEM 2200 with minimum C- grade.
MATH	2045	Calculus for the Life Sciences	(5)	Prerequisite: MATH 1085 or MATH 1083 or MATH 1040 with a minimum grade of C or satisfactory score on placement examination.
MICR	3100	General Microbiology	(4)	Prerequisites: BIOL 1200, CHEM 1100.
MICR	3300	Microbial Genetics	(3)	Prerequisite: Grade of C or higher in (MICR 3100) or instructor consent.
MICR	3500	Bacterial Physiology	(3)	Prerequisites: MICR 3300, CHEM 3200
MICR	3700	Medical Microbiology	(4)	Prerequisites: Grade of C or higher in MICR 3100 or instructor consent.
MICR	3900	Applied and Environmental Microbiology	(3)	Prerequisites: Grade of C or higher in MICR 3100 or instructor consent.
PHYS	1100	Physics A	(4)	Prerequisites: Knowledge of elementary algebra and trigonometry.
PHYS	1200	Physics B	(4)	Prerequisite: PHYS 1100.

**PREREQUISITES ARE COURSES THAT YOU MUST PASS PRIOR TO TAKING THE INDICATED COURSE.
CO-REQUISITES ARE COURSES THAT YOU SHOULD TAKE TOGETHER IN SAME SEMESTER.**

PREREQUISITES & CO-REQUISITES FOR ELECTIVE COURSES

MICR ELECTIVES (minimum 3 units)				PREREQUISITES & CO-REQUISITES
MICR 3960	Honors Thesis	(1-3)		Prerequisites: Upper Division standing, 30 units in major, completion of A3, admission to the Biology Honors program.
MICR 4100	Virology	(3)		Prerequisites: BIOL 3400, (MICR 3100 or MICR 3300)
MICR 4200	Emerging & Re-Emerging Infectious Diseases	(3)		Prerequisite: (BIOL 1200 or MICR 2010), (MICR 2020 or MICR 3100) or instructor consent.
MICR 4300	Hematology	(3)		Prerequisite: (MICR 3100 or CHEM 2300), co-requisite: (CHEM 4300 or CHEM 4310).
MICR 4400	Mycology	(3)		Prerequisite: BIOL 3400, CHEM 2200 or instructor's consent.
MICR 4540	Special Topics in Microbiology	(1-3)		Prerequisite: Upper Division standing, others as needed for specific topics.
MICR 4541	Special Activity Topics in Microbiology	(1-3)		Prerequisite: Upper Division standing, others as needed for specific topics.
MICR 4600	Theoretical and Applied Immunology	(4)		Prerequisite: ((MICR 3100 or (MICR 2010 and MICR 2020)) and (CHEM 2200 and CHEM 2201) OR CHEM 4310, each with a grade C or higher, or instructor consent.
MICR 4990	Undergraduate Directed Study Chemistry I	(1-3)		Prerequisite: Consent of full-time faculty member in consultation with department chair, grade point average of 2.50 or higher. Project must be approved before registration.

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