

UNIVERSITY TRANSFER PLANNING RESOURCES



CSU Monterey Bay
<http://admissions.csUMB.edu/>

California State University
<http://www.csumentor.edu/>

University of California
<http://www.universityofcalifornia.edu/>

**ASSIST: An Online Student-Transfer
Information System**
<http://www.assist.org/>



GE COMPLETION AT HARTNELL COLLEGE

Students may complete 39 units of the 48 CSU GE requirements at Hartnell College, thereby requiring only 9 upper-division GE semester units at CSUMB.

CONTENT DISCLAIMER

At the time of printing, the content included in this brochure represented the most accurate information available, however, articulation agreements change regularly. For the most up-to-date transfer agreements and graduation requirements, you are advised to meet with a counselor.

TRANSFER PROGRAM

Start your **Biology** studies at
Hartnell College and complete
your *Bachelor's of Science in Biology*
at **CSU Monterey Bay**



What can you do with a Biology degree?

Anesthesiologist
Animal breeder
Chiropractor
Consultant
Dietitian
Ecologist
Environmental analyst
Fisheries biologist
Food & drug inspector
Forensic technician
Forest ranger
Forester
Horticulturist
Laboratory technician
Marine biologist
Medical technologist

Molecular biologist
Museum curator
Nursery owner
Optometrist
Park naturalist
Physical therapist
Physician
Quality manager
Radiologist
Research assistant
Respiratory therapist
Sewage plant operator
Statistician
Teacher
Veterinarian
Zoo assistant

HARTNELL COLLEGE

Studying *Biology* at Hartnell College

The Biology program offers courses that are intended to create interest and enrichment through the study of living organisms and basic biological principles. The major courses provide a strong background in the biological sciences for students transferring to four-year institutions. Prerequisite courses for nursing and other allied health programs are also offered.

For more information contact faculty members:

Alexander Edens (aedens@hartnell.edu)
Jeffery Hughey (jhughey@hartnell.edu)
Ann Wright (awright@hartnell.edu)

Start by making an appointment with a counselor

Hartnell can provide the courses you need to start a rewarding education that leads to a career in the health and biological sciences. Before beginning any college major or career path it is best to first talk to a counselor. The academic counselors at Hartnell College can give you career advice, help you plan your course schedule, and assist you in understanding the requirements for transfer to CSUMB. Schedule an appointment with **Ignacio Pando** at 831-755-6820 in Merrill Hall 21 (ipando@hartnell.edu) or **LaVerne Cook** at 831-755-6820 in CAB 371 (lcook@hartnell.edu).

CALIFORNIA STATE UNIVERSITY MONTEREY BAY

Biology B.S.

This modern program combines theoretical knowledge with practical skills to meet the needs of students with a wide range of biology interests and academic/career goals.

A biology degree opens the door to hundreds of careers. Some require additional education or training beyond the Bachelor's level (for example, becoming a medical doctor or biology professor) but many do not.

By coupling a solid foundation in fundamental biology concepts with pragmatic field and laboratory skills, technology, ethics, and written/oral communication skills, we prepare students for success in post-graduation employment or advanced graduate/professional school programs in the health and life sciences.

For more information contact faculty advisors:

Sharon Anderson (shanderson@csUMB.edu)
Aparna Sreenivasan (asreenivasan@csUMB.edu)
Henrik Kibak (hkibak@csUMB.edu)
Steve Moore (stmoore@csUMB.edu)
Suzanne Worcester (sworcester@csUMB.edu)

Division of Science and Environmental Policy Chapman Science Academic Center

100 Campus Center
Seaside, CA 93955-8001
831-582-3915 or 831-582-4110
email: sep_office@csUMB.edu

Office Hours: Monday–Friday
8:30 a.m.–5:00 p.m.

<http://sep.csUMB.edu/biol/>

Lower-Division Core Requirements for all *Biology* majors

Hartnell College	CSU Monterey Bay
BIO 1 Fundamental Biological Concepts	BIO 241: Cellular and Molecular Biology & BIO 241L: Lab
BIO 2 General Zoology AND BIO 3 General Botany <i>Please note: Students need to take both courses at the same institution</i>	BIO 240: Ecology, Evolution, and Biodiversity & BIO 240L: Lab AND BIO 242: Plant & Animal Form & Function & BIO 242L: Lab <i>Please note: Students need to take both courses at the same institution</i>
CHM 1A General Chemistry I	CHEM 110: Chemistry I & CHEM 110L: Lab
CHM 1B General Chemistry II	CHEM 111: Chemistry II & CHEM 111L: Lab
MAT 13 Elementary Statistics	STAT 100: Introduction to Statistics

Biology majors will complete all lower-division Core Requirements listed above and select one concentration and complete requirements listed below:

General Biology concentration requirements:	
MAT 3A Analytic Geometry and Calculus I	MATH 150: Calculus & MATH 150L: Lab
CHM 12A Organic Chemistry I	CHEM 211: Organic Chemistry I
CHM 12B Organic Chemistry II	CHEM 212: Organic Chemistry II
PHY 2A College Physics I OR PHY 4A General Physics/Mechanics	PHYS 220: Physics I & PHYS 220L: Lab
PHY 2B College Physics II OR PHY 4B General Physics/Electricity and Magnetism	PHYS 221: Physics II & PHYS 221L: Lab
Pre-Medical concentration requirements:	
MAT 3A Analytic Geometry and Calculus I	MATH 150: Calculus I & MATH 150L: Lab
MAT 3B Analytic Geometry and Calculus II	MATH 151: Calculus II & MATH 151L: Lab
CHM 12A Organic Chemistry I	CHEM 211: Organic Chemistry I
CHM 12B Organic Chemistry II	CHEM 212: Organic Chemistry II
PHY 2A College Physics I OR PHY 4A General Physics/Mechanics	PHYS 220: Physics I & PHYS 220L: Lab
PHY 2B College Physics II OR PHY 4B General Physics/Electricity and Magnetism	PHYS 221: Physics II & PHYS 221L: Lab
Teacher Preparation concentration requirements:	
MAT 24 Trigonometry AND MAT 25 Pre-Calculus	MATH 130: Pre-Calculus & MATH 130L: Lab
CHM 23 Organic and Biological Chemistry OR CHM 12A Organic Chemistry I AND CHM 12B Organic Chemistry II	CHEM 210: Survey of Organic Chemistry & CHEM 210L: Lab OR CHEM 211: Organic Chemistry I AND CHEM 212: Organic Chemistry II
PHY 10 Introduction to Physics	PHYS 150: Survey of Physics & PHYS 150L: Lab

Additional CSUMB Graduation Requirements (non-GE) that may be taken at Hartnell College

CSS 43 Computer Systems and Internet Literacy	CST 101 or ENVS 300L
Foreign language up through the 3 rd semester	Foreign language up through the 3 rd semester

Examples of Upper-Division Pathways for *Biology* majors

CSU Monterey Bay	
Year 3	Year 4
Core requirements:	
BIO 300: Issues & Ethics in Biology BIO 311: Genetics	BIO 490: Biology Capstone BIO 497: Capstone Independent Study
General Biology concentration sample pathway:	
BIO 340/L: Ecology with Lab BIO 345/L: Marine Biology with Lab ENVS 349S: Natural History Interpretation Service Learning Upper-Division Electives	ENVS 332/L: Intro to GIS/GPS with Lab ENVS 355/L: Environmental Monitoring with Lab ENVS 470: Marine Conservation Biology Upper-Division Electives
Pre-Medical concentration sample pathway:	
BIO 320/L: Microbiology with Lab BIO 344L: Environmental Biotechnology Lab ENVS 384S: Environmental Justice and Policy Service Learning Upper-Division Electives	BIO 310/L: Biochemistry with Lab KIN 370: Anatomy KIN 371: Physiology BIO 414: Advanced Cell Biology PH 420: Multicultural Health Education and Promotion Upper-Division Electives
Teacher Preparation concentration sample pathway:	
BIO 320/L: Microbiology with Lab OR BIO 345/L: Marine Biology with Lab BIO 340/L: Ecology with Lab Upper-Division Electives	BIO 310/L: Biochemistry with Lab BIO 379S: Biology Education Service Learning BIO 414: Advanced Cell Biology PH 420: Multicultural Health Education and Promotion Upper-Division Electives

University Learning Requirements (ULRs)

The State of California requires completion of a 48 unit General Education (GE) Breadth program that includes a minimum of 9 upper-division GE semester units. At CSUMB, these GE courses are identified as ULRs. Biology majors can fulfill their upper-division ULR requirement by taking BIO 300 (4 units) and one of the following Service Learning courses: BIO 349S, ENVS 379S, ENVS 384S (5 units each).

Graduation Writing Assessment Requirement (GWAR)

Biology majors fulfill this requirement with BIO 300.

CSUMB Graduation Learning Outcomes:

CSUMB has four graduation learning outcomes, two of which are fulfilled in the Biology major, and the other two of which (technology/information competence and 2nd language proficiency) may be completed at Hartnell with CSS 43 and the third semester of a foreign language.