



A Course of Study for

BIOLOGICAL SCIENCE - Transfer

This major can lead to many biological science careers. Medical laboratory technicians work in a clinical laboratory and perform routine tests to obtain data used by physicians and other medical staff in the prevention, diagnosis, and treatment of illness. Bioscience technicians conduct tests and analyze data for use in research and production. Some additional careers include genetic counselors, environmental health specialists, medical illustrators, microbiologists, toxicologists, wild life biologists, and teachers.

This major may also lead to many other careers. For additional possibilities, visit the Career Services Center on campus to utilize computerized career information systems and other valuable career resources.

TRANSFER

Students planning to transfer to a four-year college should complete the lower-division major requirements and the general education pattern for the appropriate transfer institution. Santa Monica College has articulation agreements for this major with the following UC, CSU, and private institutions. Exact major requirements for these and other UC and CSU campuses can be found online at www.assist.org. Articulation agreements with private institution can be found online at www.smc.edu/articulation.

Please note: Due to the competitive nature of Biology, students are advised to complete as many lower division courses as possible prior to transfer. Please see a counselor for more information.

UNIVERSITY OF CALIFORNIA, BERKELEY

B.A. INTEGRATIVE BIOLOGY: *minimum admission requirements:* BIOLOGY 21 **and** 22 **and** 23; CHEMISTRY 11 **and** 12, 21, 22 **and** 24; MATH 7; PHYSICS 8, 9 **or** 21 **and** 22 **and** 23

Please Note: Additional courses in math, statistics, biochemistry, history of biology and/or foreign language recommended.

B.A. MOLECULAR AND CELL BIOLOGY: *minimum admission requirements:* BIOLOGY 21 **and** 22 **and** 23; CHEMISTRY 11 **and** 12, 21, 22 **and** 24; MATH 7, 8; *strongly recommended courses:* PHYSICS 8 **and** 9 **or** PHYSICS 21 **and** 23 **and** 24

UNIVERSITY OF CALIFORNIA, DAVIS

As many courses as possible should be completed prior to transfer.

The following must be completed prior to transfer with a minimum of 2.5 GPA: BIOLOGY 21 **and** 22 **and** 23 (at least one biology course must be completed with a "B" or higher); MATH 7 **and** 8; CHEMISTRY 11 **and** 12; it is **highly** recommended that Chemistry 21 **and** 22 **and** 24 be completed prior to transfer with an overall GPA for the series of at least 2.5.

A.B./B.S. BIOLOGICAL SCIENCES: BIOLOGY 21, 22, 23; CHEMISTRY 11, 12, 21, 22, **and** 24; MATH 7, 8, 54; PHYSICS 6 **and** 7 **or** 8 **and** 9

A.B./B.S. MICROBIOLOGY: BIOLOGY 21, 22, 23; CHEMISTRY 11, 12, 21, 22 **and** 24; MATH 7, 8, 54; PHYSICS 6 **and** 7 **or** 8 **and** 9

UNIVERSITY OF CALIFORNIA, IRVINE

BIOLOGICAL SCIENCES: BIOLOGY 21 **and** 22 **and** 23; CHEMISTRY 11, 12, 21, 22 **and** 24, 31; MATH (7 **and** 8) **or** (7 **and** 52); PHYSICS (8 **and** 9) **or** PHYSICS (21 **and** 23) **or** (21 **and** 22); *all applicants must complete the following:* CHEMISTRY 11 **and** 12 (with a grade of B or higher) **and** BIOLOGY 21, 22 **and** 23 (with a grade of C or higher and have a cumulative grade point average of 3.0 or higher).

UNIVERSITY OF CALIFORNIA, LOS ANGELES

B.S. BIOLOGY: BIOLOGY 21, 22, 23; CHEMISTRY 11, 12, 21, 22, 31; MATH 7, 8, 54; PHYSICS (8 **and** 9) **or** (21 **and** 22 **and** 23)

Please Note: The Biology major at UCLA is very competitive. *Minimum admissions requirements:* BIOLOGY 21, 22, 23; CHEMISTRY 11, 12, 21; MATH 7, 8; *strongly recommended courses:* CHEMISTRY 22, 31; PHYSICS 8 **and** 9 **or** 21, 22, 23. Students are advised to complete courses beyond the minimum pattern to be more competitive for admission.

ADDITIONAL INFORMATION ON REVERSE. SUBJECT TO CHANGE WITHOUT NOTICE.

*www.assist.org

*Please access the above web-site for the most updated articulation information.

UNIVERSITY OF CALIFORNIA, RIVERSIDE

The IGETC is not accepted for the following majors. Transfer students are encouraged to follow the College of Natural and Agricultural Sciences GE/Breath pattern. (Please consult a counselor or www.assist.org)

BIOLOGY AND BIOLOGICAL SCIENCES MAJORS:

1. Students selected for these majors will need to present an overall grade point average of at least 2.70 in all UC transferable coursework.
2. Courses must be completed with a grade of C or higher for admission to the major:
In order to meet selection criteria for the major students must meet published UC admission criteria and also complete prior to transfer CHEMISTRY 11 **and** 12 and at least three of the following course sequences:
MATH 7 **and** 8;
BIOLOGY 21, 22 **and** 23;
PHYSICS 8 **and** 9 **or** 21 **and** 22 **and** 23;
CHEMISTRY 21, 22 **and** 24 (with a grade of B or higher)

The Biological Sciences major differs from the Biology major in that Biological Science majors select from among 9 structured tracks of specialization in upper-division coursework. These tracks are: Biology; Cell/Molecular and Developmental Biology; Conservation Biology; Entomology; Environmental Toxicology; Evolution and Ecology; Microbiology; Plant Biology and Medical Biology.

BIOLOGICAL SCIENCE, CONSERVATION BIOLOGY TRACK: add GEOGRAPHY 5

BIOLOGICAL SCIENCE, BIOLOGY TRACK: add two courses from the following: CS 50, 52, 18, (20A **or** 20B)

To be best prepared for upper-division coursework at UCR, students are advised to complete as many of these courses as possible.

UNIVERSITY OF CALIFORNIA, SAN DIEGO

All majors in the division of Biological Sciences are impacted effective Fall 2011. See www.biology.ucsd.edu for details.

1. Transfer students should have completed eight of the following courses (or equivalent) at the time of transfer: BIOLOGY 21, 22, 23; CHEMISTRY 11, 12, 21, 22; MATH 7, 8, 11; PHYSICS 8, 9 **or** 21, 22, 23
2. A student's best six grades from the eight courses listed will be used to calculate a GPA which must be at least 2.5
3. Students must meet with a Division of Biological Sciences staff advisor during their first quarter at UCSD
4. Any student who lacks the appropriate course(s) or GPA requirement will have three-quarters in which to make up the deficiency
5. Students that do not meet these standards will be dropped from the major

B.S. GENERAL BIOLOGY: BIOLOGY 21 **and** 22 **and** 23; MATH 7 **and** 8, 11; CHEMISTRY 11 **and** 12, 21 **and** 22; PHYSICS 8 **and** 9 **or** 21 **and** 22 **and** 23

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

B.A./B.S. BIOLOGY: CHEMISTRY 11 **and** 12, 21 **and** 22 **and** 24; BIOLOGY 21 **and** 22 **and** 23; MATH 7 **and** 8 **or** 28 **and** 29; MATH 54 **or** 13 **and** 15; PHYSICS 8 **and** 9 **or** 6 **and** 7

Applicants to the biological science majors are screened on the basis of a grade point average of 2.7 or better in science and math major preparatory courses. Students are admitted initially to the pre-major. It is highly recommended that students complete as many of the major preparatory courses as possible with no grade less than C prior to admission.

At minimum, students must complete: CHEMISTRY 11 **and** 12, and at least one of the following series: BIOLOGY 21 **and** 22 **and** 23; *strongly recommended courses:* MATH 7 **and** 8 **or** 28 **and** 29; CHEMISTRY 21 **and** 22 **and** 24; PHYSICS 8 **and** 9 **or** 6 **and** 7

OTHER MAJORS OFFERED: BioChemistry, Biochemistry-Molecular Biology, Aquatic Biology, Ecology & Evolution, Microbiology, Pharmacology, Physiology, Zoology

Please Note: Effective beginning fall 2009: To be admitted to the pre-major, all transfer students must have completed the following:

- 1 year sequence of General Chemistry with laboratory, with no individual grade less than C (2.0).
- 1 complete sequence (2-3 terms) of major-applicable General Biology with laboratory, with no individual grade less than C (2.0).
- A cumulative grade point average of 2.7 or higher in the required courses listed above.

For students to graduate within two years of transferring we strongly recommend the completion of one year of organic chemistry with laboratory, one year of general physics with laboratory, and one year of calculus or calculus with statistics. Any of these courses completed with a grade lower than C might not satisfy course prerequisites at UCSB.

Please see www.assist.org for details.

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

BIOLOGY, B.A.: BIOLOGY 21 **and** 22 **and** 23; CHEMISTRY 11, 12, 21, 22 **and** 24; MATH 7, 8; PHYSICS 6 **and** 7 **or** 21 **and** 22 **and** 23

BIOLOGY, B.S.: BIOLOGY 21 **and** 22 **and** 23; CHEMISTRY 11, 12, 21, 22 **and** 24; MATH 7, 8, 11; PHYSICS 21 **and** 22 **and** 23

CALIFORNIA STATE UNIVERSITY, LONG BEACH

B.S. BIOLOGY: BIOLOGY 21 **and** 22, 23; CHEMISTRY 11, 12; MATH 7, 8; PHYSICS 6, 7 **or** 21 **and** 22

CALIFORNIA STATE UNIVERSITY, LOS ANGELES

B.S. BIOLOGY: ENGLISH 2; BIOLOGY 21 **and** 22 **and** 23; CHEMISTRY 11 **and** 12; MATH 7, 8; PHYSICS 6 **and** 7; *recommended:* at least one year of foreign language

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CALIFORNIA STATE UNIVERSITY, NORTHRIDGE**BIOLOGY, B.A.:** BIOLOGY 21, 22, 23; CHEMISTRY 11, 12; MATH 2 **or** 26; PHYSICS 6 **and** 7 **or** 8 **and** 9*The following may be applied to the selective program/elective requirements (see CSUN catalog):* PHYSIOLOGY 3; MATH 7 **or** 28**BIOLOGY, B.S.:** BIOLOGY 21, 22, 23; CHEMISTRY 11, 12; PHYSICS 6 **and** 7 **or** 8 **and** 9; MATH 7 **or** 28**OTHER OPTIONS:****CELL & MOLECULAR OPTION:** add MATH 8 **or** 29**MARINE BIOLOGY OPTION:** add CHEMISTRY 21, 22 **and** 24**MICROBIOLOGY OPTION:** add MATH 8 **or** 29, 52 **or** 54**ENVIRONMENTAL OPTION:** add CHEMISTRY 21, 22 **and** 24**CALIFORNIA POLYTECHNIC STATE UNIVERSITY, SAN LUIS OBISPO****B.S. BIOLOGICAL SCIENCES:** BIOLOGY 23; MICROBIOLOGY 1; CHEMISTRY 11 **and** 12, 21; MATH 7 **or** 28; PHYSIC 6 **and** 7**MOLECULAR AND CELLULAR BIOLOGY CONCENTRATION:** add CHEMISTRY 22 **and** 24Santa Monica College has articulation agreements for this major (see www.smc.edu/articulation for exact major requirements) with the following private and out-of-state institutions:**LOYOLA MARYMOUNT UNIVERSITY****B.A. BIOLOGY:** BIOLOGY 21 **and** 22 **and** 23; CHEMISTRY 11, 12, 21; MATH 7**B.S. BIOLOGY:** BIOLOGY 21 **and** 22 **and** 23; CHEMISTRY 11, 12, 21, 22, 24; MATH 7, 8; PHYSICS 8, 9**B.S. BIOCHEMISTRY:** CHEMISTRY 11, 12, 21, 22, 24; BIOLOGY 21, 22, 23; MATH 7, 8; PHYSICS 21, 22**B.S. NATURAL SCIENCE, PRE-PHYSICAL/OCCUPATIONAL THERAPY EMPHASIS:** ANATOMY 1 **and** PHYSIOLOGY 3; BIOLOGY 21, 22, 23, CHEMISTRY 11, 12; MATH 7, 52 **or** 54; NUTRITION 1; PHYSICS 8, 9; PSYCHOLOGY 1General education requirements for the University of California, California State University, and other local universities are listed on a separate sheet available in the Transfer/Counseling Center, as well as online (go to www.smc.edu/articulation).**MILLS COLLEGE****"Minimum"** is the minimum coursework needed in order to complete a B.A. in the associated major in two years, requiring multiple "heavy" semesters with three or four science courses in one semester. Students on a four-year B.A. path typically take two science or math courses each semester. "Minimum" coursework will **not** enable a student to complete a B.S. in two years. Students who do not meet the "minimum" pre-requisites may be able to complete the program, given extra time or some summer coursework, and should contact the departmental representatives below.**"Optimal"** is the additional coursework to put a transfer student on the same schedule as a student who entered Mills College as a freshman, for the B.A. program. Students who enter at this level will also be able to complete the B.S. by taking one or more semesters with 4 science courses and/or some summer coursework.**"Recommended"** courses are specifically for students interested in the B.S. degree. In the B.S. program, students typically take 3 science and/or math courses after the freshman year. With the recommended coursework completed, transfer students should not need to take more than 3 science/math courses in one semester to complete the B.S. degree.**BIOLOGY:** Minimum: CHEMISTRY 11, 12; *optimal, also complete:* BIOLOGY 21, 22; CHEMISTRY 21, 22, 24; MATH 7, 52; *recommended, also complete:* MATH 7, 8, 54 **and** 1 semester of computer programmingDepartment Representative: John Harris johnh@mills.edu**BIOCHEMISTRY/MOLECULAR BIOLOGY:** Minimum: CHEMISTRY 11, 12; MATH 7, 8; *optimal, also complete:* BIOLOGY 22, 23; CHEMISTRY 21, 22, 24; *recommended, also complete:* MATH 11Department Representative: John Brabson johnb@mills.edu**BIOPSYCHOLOGY:** Minimum: CHEMISTRY 11, 12; PSYCHOLOGY 1*Optimal, also complete:* BIOLOGY 21, 22, 23; CHEMISTRY 21; MATH 52Departmental Representative: Carol George george@mills.eduGeneral education requirements for the University of California, California State University, and other local universities are listed on a separate sheet available in the Transfer/Counseling Center, as well as online (go to www.smc.edu/articulation).**MOUNT SAINT MARY'S COLLEGE****BIOLOGICAL SCIENCES WITH EMPHASIS IN PRE-PHYSICAL THERAPY:** ANATOMY 1; BIOLOGY 21, 22; CHEMISTRY 11, 12; CIS 1; MATH 54; PHYSICS 6, 7; PSYCHOLOGY 1; SOCIOLOGY 1; *select two courses from the following:* ANTHROPOLOGY 2, 3; ECONOMICS 1; GEOGRAPHY 2; POLITICAL SCIENCE 1, 2, 11, 19; PSYCHOLOGY 2, 11, 19; SOCIOLOGY 2General education requirements for the University of California, California State University, and other local universities are listed on a separate sheet available in the Transfer/Counseling Center, as well as online (go to www.smc.edu/articulation).**ADDITIONAL INFORMATION ON REVERSE. SUBJECT TO CHANGE WITHOUT NOTICE.***www.assist.org

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