

# ORANGE COAST COLLEGE

## TRANSFER CURRICULUM GUIDE BIOLOGICAL SCIENCES

### LOWER DIVISION MAJOR REQUIREMENTS FOR TRANSFER

The following courses should be taken at OCC prior to transfer. Courses not offered at OCC will need to be taken after transfer unless otherwise noted. Four-year colleges and universities often make changes in their requirements for majors. The information contained in this guide is based on the most recent information available from the four-year school and does not constitute an official agreement.

Recent updates to this guide can be found on the Transfer Center Website at:

[www.occ.cccd.edu/departments/studentsvcs/transferctr](http://www.occ.cccd.edu/departments/studentsvcs/transferctr)

### UNIVERSITY OF CALIFORNIA, BERKELEY

#### BACHELOR OF SCIENCE IN GENETICS AND PLANT BIOLOGY (College of Natural Resources)

UCB	OCC	(10/16:A16-17)
<b>Minimum Admissions Requirements:</b>		
BIOL 1A/AL	<b>Either</b> BIOL 180&182/182L <b>or</b> 180 & 283	
BIOL 1B	<b>Either</b> BIOL 180 & 183/183L & 280 <b>or</b> 185 & 280	
CHEM 1A/AL	CHEM 180	
CHEM 3A/AL, 3B/BL	CHEM 220/220L, 225/225L	
MATH 1AB <b>or</b> 16AB	MATH 180(or 180H) &185(or 185H)*	
ENGL R1AB	ENGL 100 & 101(or 101H)	
<b>Strongly Recommended Courses (prior to transfer):</b>		
PHYS 7A <b>or</b> 8A	PHYS 185 <b>or</b> 130	
STAT 2 <b>or</b> 20	MATH 160(or 160H) <b>or</b> PSYC 160+ <b>or</b> No Equivalent Course	
<b>Plus: 15 units from:</b> art, economics, history, philosophy, music, political science and/or foreign language (maximum 6 units in foreign language).		
*MATH 182H is also equivalent to MATH 1AB. +PSYC 160 will not satisfy IGETC Area 2 - Mathematical Concepts and Quantitative Reasoning. Students wishing to satisfy IGETC Area 2 should take MATH 160(or 160H).		
<b>Note: Transfer students must complete <u>all</u> minimum admission requirements listed above by the end of the Spring semester prior to admission (exceptions are highly unlikely). Minimum admission requirements include completion of courses in English, chemistry, biology and math. Students will be evaluated on strength of academic preparation and completion of lower division requirements in biology, chemistry and math, GPA in required courses, cumulative GPA and personal statement. Although IGETC is not required, certification will fulfill requirements for English and all Humanities and Social Sciences breadth courses. If courses are articulated in a series, all courses must be completed to receive credit. AP credit is accepted for math, chemistry, physics and statistics, but not recommended for science and math courses. With a score of 3 or higher, AP for humanities/social science may also be counted toward the 15 unit humanities requirement.</b>		

#### BACHELOR OF ARTS IN INTEGRATIVE BIOLOGY

UCB	OCC	(10/16:A16-17)
<b>Strongly Recommended Courses (prior to transfer):</b>		
PHYS 7AB <b>or</b> 8AB	PHYS 185 & 280 <b>or</b> 130 & 135	
<b>Minimum Admissions Requirements:</b>		
BIOL 1A/AL	<b>Either</b> BIOL 180 &182/182L <b>or</b> 180 & 283	
BIOL 1B	<b>Either</b> BIOL 180 &183/183L & 280 <b>or</b> 185 & 280	
CHEM 1A/AL	CHEM 180	
CHEM 3A/AL & 3B/BL	CHEM 220/220L & 225/225L	
		<b>Continued</b>

<b>UCB</b>	<b>OCC</b>	<b>(10/16:A16-17)</b>
<b>Select 2 math courses from:</b>		
MATH 1A	MATH 180(or 180H)*	
MATH 1B	MATH 185(or 185H)*	
MATH 53	MATH 280(or 280H)	
MATH 54	MATH 285(or 285H)	
MATH 55	MATH 230	
*MATH 182H will also satisfy this requirement.		
<b>Note: Students should complete as many lower division major requirements as possible by the end of spring semester prior to admission. Minimum admission requirements include completion of courses in biology, chemistry, math. Completion of physics is strongly recommended, although not required for admission. Completion of IGETC, strength of academic preparation and GPA are the primary selection criteria for admission. AP credit will not be accepted for major prep requirements.</b>		

### **BACHELOR OF ARTS IN MOLECULAR AND CELL BIOLOGY**

Options: Biochemistry & Molecular Biology (Biochemistry/Molecular Biology, Biological Chemistry), Cell & Developmental Biology (Cell/Systems Biology, Medical Biology/Physiology), Genetics, Genomics & Development (Genetics/Genomics & Development, Developmental Genetics), Immunology & Pathogenesis (Immunology, Infectious Diseases), Neurobiology

<b>UCB</b>	<b>OCC</b>	<b>(10/16:A16-17)</b>
<b>Strongly Recommended Courses (prior to transfer):</b>		
PHYS 7AB <u>or</u> 8AB	PHYS 185 & 280 <u>or</u> 130 & 135	
<b>Minimum Admissions Requirements:</b>		
BIOL 1A/AL	<b>Either</b> BIOL 180 & 182/182L <u>or</u> 180 & 283	
BIOL 1B	<b>Either</b> BIOL 180 & 183/183L & 280 <u>or</u> 185 & 280	
CHEM 1A/AL	CHEM 180	
CHEM 3A/AL & 3B/BL	CHEM 220/220L & 225/225L	
<b>Select 2 math courses from:</b>		
MATH 1A	MATH 180(or 180H)*	
MATH 1B	MATH 185(or 185H)*	
MATH 53	MATH 280(or 280H)	
MATH 54	MATH 285(or 285H)	
MATH 55	MATH 230	
<b>For Biochemistry &amp; Molecular Biology - Biological Chemistry</b>		
CHEM 1B	CHEM 185	
<b>Take and score at least a 75% on the ACS exam, which then satisfies the CHEM 112A/112B requirement.</b>		
*MATH 182H will also satisfy this requirement.		
<b>Note: Students must complete <u>all</u> lower division major requirements by the end of spring semester prior to admission. Minimum admission requirements include completion of courses in biology, chemistry, and math. Completion of physics is strongly recommended, although not required for admission. AP credit is accepted for chemistry and biology, however, the department discourages the use of AP credit to waive lower division courses. Many professional health schools will not accept AP scores in lieu of course work.</b>		

### **BACHELOR OF SCIENCE IN MOLECULAR ENVIRONMENTAL BIOLOGY**

<b>UCB</b>	<b>OCC</b>	<b>(10/16:A16-17)</b>
PHYS 7AB <u>or</u> 8AB	PHYS 185 & 280 <u>or</u> 130 & 135	
Environmental Science	BIOL 280	
Social Science	No Equivalent Course	
<b>Minimum Admissions Requirements:</b>		
BIOL 1A/AL	<b>Either</b> BIOL 180 & 182/182L <u>or</u> 180 & 283	
BIOL 1B	<b>Either</b> BIOL 180 & 183/183L & 280 <u>or</u> 185 & 280	
CHEM 1A/AL	CHEM 180	
CHEM 3A/AL & 3B/BL	CHEM 220/220L & 225/225L	
MATH 1A <u>or</u> 16 AB	MATH 180(or 180H) & 185(or 185H)*	
ENGL R1AB	ENGL 100 & 101(or 101H)	
<b>Plus: One UC transferable course in humanities and one UC transferable course in social and behavioral sciences.</b>		

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\*MATH 182H will also satisfy this requirement.

**Note:** Students must complete all lower division major requirements by the end of spring semester prior to admission (exceptions highly unlikely). Minimum admission requirements include completion of courses in English, biology, chemistry, and math. If courses are articulated in a series, all courses must be completed to receive credit. AP credit is accepted for biology, calculus, chemistry, English, environmental science and statistics.

## UNIVERSITY OF CALIFORNIA, IRVINE

**BACHELOR OF SCIENCE IN BIOCHEMISTRY AND MOLECULAR BIOLOGY**

**BACHELOR OF SCIENCE IN BIOLOGY/EDUCATION**

**BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES**

**BACHELOR OF SCIENCE IN DEVELOPMENTAL AND CELL BIOLOGY**

**BACHELOR OF SCIENCE IN ECOLOGY AND EVOLUTIONARY BIOLOGY**

**BACHELOR OF SCIENCE IN GENETICS**

**BACHELOR OF SCIENCE IN MICROBIOLOGY AND IMMUNOLOGY**

**BACHELOR OF SCIENCE IN NEUROBIOLOGY**

<b>UCI</b>	<b>OCC</b>	<b>(10/14:A16-17)</b>
BIO SCI 93	BIOL 180*	
BIO SCI 94	BIOL 185*	
BIO SCI 97	BIOL 283	
BIO SCI 98	BIOL 281	
BIO SCI 99	BIOL 282(or 282H)	
CHEM 1ABC, 1LC/LD	CHEM 180 & 185*	
CHEM 51ABC, 51LB/LC	CHEM 220/220L & 225/225L* @	
PHYS 3ABC, 3LB/LC <u>or</u> 7CDE, 7LC/LD	PHYS 130 & 135 <u>or</u> 185 & 280	
Mathematics**	MATH 180(or 180H) & <b>one of the following:</b> MATH 160(or 160H), 185(or 185H), 182H, 280(or 280H), 285(or 285H), PSYC 160+	
<b>For BS Biology/Education add:</b>		
BIO SCI 14	No Equivalent Course	
LPS 60	No Equivalent Course	
EDUC 55	No Equivalent Course	
*Must be completed prior to transfer with a "C" or better.		
**Students attending a health professional school should take one semester of calculus and one semester of statistics.		
@ Articulation is based on the entire series.		
+PSYC 160 will not satisfy IGETC Area 2 - Mathematical Concepts and Quantitative Reasoning. Students wishing to satisfy IGETC Area 2 should take MATH 160(or 160H).		
<b>Notes:</b> Apply as Biological Sciences majors. Biology/Education majors apply directly to this major. Preference is given to applicants with the highest grades overall who have completed course prerequisites. It is strongly advised that students complete all requirements prior to transfer. All applicants must maintain a cumulative GPA of 3.0 or higher. A single course may be used only once. Once enrolled at UCI, only UCI courses will satisfy major requirements.		

## BACHELOR OF ARTS IN PHARMACEUTICAL SCIENCES

See Health Sciences Transfer Curriculum Guide for requirements.

# UNIVERSITY OF CALIFORNIA, LOS ANGELES

## BACHELOR OF SCIENCE IN BIOLOGY

## BACHELOR OF SCIENCE IN ECOLOGY, BEHAVIOR AND EVOLUTION

## BACHELOR OF SCIENCE IN MICROBIOLOGY, IMMUNOLOGY & MOLECULAR GENETICS

## BACHELOR OF SCIENCE IN MOLECULAR, CELL & DEVELOPMENTAL BIOLOGY

## BACHELOR OF SCIENCE IN NEUROSCIENCE

UCLA	OCC	(10/15:A16-17)
LIFE SCI 7A & 23L	BIOL 180	
LIFE SCI 7B	BIOL 180 & 185	
LIFE SCI 7C	BIOL 182 <u>or</u> 225	
CHEM 20AB, 20L, 30AL	CHEM 180 & 185	
MATH 3ABC <u>or</u> MATH 31AB	No Equivalent Courses <u>or</u> MATH 180(or 180H)+ & <b>either</b> 182H <u>or</u> 185(or 185H)	
PHYS 6ABC <u>or</u> PHYS 1ABC, 4AL, 4BL	PHYS 130 & 135 <u>or</u> 185 & 280 & 285	
+Students using AP/IB credit may be required to complete UCLA's MATH 3C, 32A or an equivalent course after transfer.		
<b>Notes: These majors are highly selective. By the end of Spring prior to admission, transfer students should complete one year of biology with lab, one year of general chemistry with lab, one semester of organic chemistry with lab, one year of calculus and one semester of organic chemistry. A second semester of organic chemistry or one year of calculus based physics is strongly recommended. All courses must be completed with a letter grade.</b>		

## BACHELOR OF SCIENCE IN PSYCHOBIOLOGY

UCLA	OCC	(10/15:A16-17)
PSYCH 10	PSYC 100	
LIFE SCI 7A & 23L	BIOL 180	
LIFE SCI 7B	BIOL 180 & 185	
LIFE SCI 7C	BIOL 182 <u>or</u> 225	
CHEM 20AB, 20L, 30AL	CHEM 180 & 185	
CHEM 30AB, 30BL	CHEM 220 & 220L & 225	
MATH 3ABC <u>or</u> MATH 31AB	No Equivalent Courses <u>or</u> MATH 180(or 180H)+ & <b>either</b> 182H <u>or</u> 185(or 185H)	
PHYS 6ABC <u>or</u> PHYS 1ABC, 4AL, 4BL	PHYS 130 & 135 <u>or</u> 185 & 280 & 285	
+Students using AP/IB credit may be required to complete UCLA's MATH 3C, 32A or an equivalent course after transfer.		
<b>Notes: This major is highly selective. By the end of Spring prior to admission transfer students should complete one year of biology with lab, one year of general chemistry with lab, one semester of organic chemistry with lab, introductory psych and one year of calculus. One year of calculus based physics and a second semester of organic chemistry is strongly recommended. All courses must be completed with a letter grade.</b>		

## BACHELOR OF SCIENCE IN BIOCHEMISTRY

UCLA	OCC	(10/15:A16-17)
CHEM 20AB, 20L, 30AL	CHEM 180 & 185	
CHEM 30ABC, BL, CL	CHEM 220/220L & 225/225L	
MATH 31AB	MATH 180(or 180H)+ & <b>either</b> 182H <u>or</u> 185(or 185H)	
MATH 32A	MATH 280(or 280H)	
PHYS 1ABC, 4BL <u>or</u> PHYS 6ABC	PHYS 185 & 280 & 285 <u>or</u> 130 & 135	
LIFE SCI 7A & 23L	BIOL 180	
LIFE SCI 7B	BIOL 180 & 185	
LIFE SCI 7C	BIOL 182 <u>or</u> 225	
*MATH 182H is also equivalent to MATH 31AB.		
<b>Note: By the end of Spring prior to admission, transfer students should complete 3 semesters of calculus, one year of biology with lab, one year of general chemistry with lab, one semester of organic chemistry with lab and one semester of calculus based physics with lab. All courses must be taken for a letter grade.</b>		

# UNIVERSITY OF CALIFORNIA, RIVERSIDE

General Education Requirements for majors listed below - Instead of the IGETC, students must complete the GE pattern for the College of Natural & Agricultural Sciences. See ASSIST at <http://assist.org>

## BACHELOR OF SCIENCE IN BIOLOGY

### BACHELOR OF ARTS IN BIOLOGY+

### BACHELOR OF SCIENCE IN CELL, MOLECULAR & DEVELOPMENTAL BIOLOGY

### BACHELOR OF ARTS IN CELL, MOLECULAR & DEVELOPMENTAL BIOLOGY+

UCR	OCC	(10/15:A16-17)
BIOL 5A/5LA	BIOL 180	
BIOL 5B	BIOL 185 <b>or</b> BIOL 182/182L & 183/183L	
BIOL 5C	BIOL 280	
MATH 9AB	MATH 180(or 180H) & 185(185H)*	
PHYS 2ABC with labs <b>or</b> PHYS 40ABC	PHYS 130 & 135 <b>or</b> 185 & 280 & 285	
CHEM 1ABC with labs	CHEM 180 & 185	
Organic Chemistry	CHEM 220/220L & 225/225L	
+Students pursuing a BA degree also need to complete a foreign language through 280.		
*MATH 182H is also equivalent to MATH 9AB.		
<b>Note: A minimum 2.7 GPA (baseline, not guarantee for admission) is required in all UC transferable course work. Students are selected on the basis of academic preparation, by their GPA and the strength of preparation for the major. Courses must be completed with a letter grade of "C" or better. Students are advised to complete as many lower division major requirements as possible prior to transfer. Students must complete CHEM 180 &amp; 185 and MATH 180(or 180H) &amp; 185(or 185H) prior to transfer. AP scores are accepted for math and physics. For information about these majors go to: <a href="http://www.biology.ucr.edu">www.biology.ucr.edu</a></b>		

## BACHELOR OF SCIENCE IN MICROBIOLOGY

UCR	OCC	(10/15:A16-17)
BIOL 5A/5LA	BIOL 180	
BIOL 5B	BIOL 185 <b>or</b> 182/182L & 183/183L	
BIOL 5C	BIOL 280	
MATH 9AB	MATH 180(or 180H) & 185(185H)*	
PHYS 2ABC with labs <b>or</b> PHYS 40ABC	PHYS 130 & 135 <b>or</b> 185 & 280 & 285	
CHEM 1ABC with labs <b>or</b> Organic Chemistry	CHEM 180 & 185 <b>or</b> CHEM 220/220L & 225/225L	
+Students pursuing a BA degree also need to complete a foreign language through 280.		
*MATH 182H is also equivalent to MATH 9AB.		
**Subject credit for CHEM 112ABC.		
<b>Note: A minimum 2.70 GPA (baseline, not guarantee for admission) is required in all UC transferable course work. Students are selected on the basis of academic preparation, by their GPA and the strength of preparation for the major. Courses must be completed with a letter grade of "C" or better. Students are advised to complete as many lower division major requirements as possible prior to transfer. Students must complete CHEM 180 &amp; 185, MATH 180(or 180H) &amp; 185(or 185H) <b>or</b> 182H and one additional sequence from: biology(5ABC/LA), one year of organic chemistry or physics (2ABC/LA-LB-LC or 40ABC) prior to transfer. AP scores are accepted for math and physics. For information about these concentrations go to: <a href="http://www.biology.ucr.edu">www.biology.ucr.edu</a></b>		

## BACHELOR OF SCIENCE IN PLANT BIOLOGY

### BACHELOR OF ARTS PLANT BIOLOGY+

Options: Plant Cellular, Molecular & Developmental Biology; Plant Genetics, Breeding & Biotechnology; Ecology, Evolution & Systematics; Plant Pathology, Nematology & Pest Management

UCR	OCC	(10/15:A16-17)
BIOL 5A/5LA	BIOL 180	
BIOL 5B	BIOL 185 <b>or</b> 182/182L & 183/183L	
BIOL 5C	BIOL 280	
MATH 9AB	MATH 180(or 180H) & 185(185H)*	
PHYS 2ABC with labs <b>or</b> PHYS 40ABC	PHYS 130 & 135 <b>or</b> 185 & 280 & 285	
CHEM 1ABC with labs	CHEM 180 & 185	
Organic Chemistry	CHEM 220/220L & 225/225L	Continued

<b>UCR</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
+Students pursuing a BA degree also need to complete a foreign language through 280. *MATH 182H is also equivalent to MATH 9AB. **Subject credit for CHEM 112ABC.		
<b>Note: a minimum GPA of 2.7 (baseline, not guarantee for admission) is required in all UC transferable course work. Students are selected on the basis of academic preparation, by their GPA and the strength of preparation for the major. Courses must be completed with a letter grade of "C" or better. Students are advised to complete as many major prep courses as possible prior to transfer. Students must complete CHEM 180 &amp; 185, BIOL 180(or 180H) and BIOL 185 or 182/182L &amp; 183/183L and MATH 180(or 180H) &amp; 185(or 185H) or 182H prior to transfer. AP scores are accepted for math and physics. For information about this major go to: <a href="http://www.plantbiology.ucr.edu">www.plantbiology.ucr.edu</a></b>		

## UNIVERSITY OF CALIFORNIA, SAN DIEGO

### BACHELOR OF SCIENCE IN BIOCHEMISTRY AND CELL BIOLOGY

### BACHELOR OF SCIENCE IN HUMAN BIOLOGY

### BACHELOR OF SCIENCE IN MICROBIOLOGY

### BACHELOR OF SCIENCE IN MOLECULAR BIOLOGY

### BACHELOR OF SCIENCE IN PHYSIOLOGY AND NEUROSCIENCE

<b>UCSD</b>	<b>OCC</b>	<b>(10/16:A16-17)</b>
BILD 1, 2, 3 & 4	BIOL 180 & 185	
MATH 10ABC/20ABC	MATH 180* & 185* & 280(or 280H)+	
PHYS 2ABC w/labs <u>or</u> PHYS 1ABC w/labs	PHYS 185, 280 & 285 <u>or</u> 130 & 135	
CHEM 6ABC, 7L	CHEM 180 & 185	
CHEM 140AB	CHEM 220 & 225**	
CHEM 143A	CHEM 220L**	
<b>For BS Physiology and Neuroscience add:</b>		
BILD 2	BIOL 180(or 180H) & 185	
*MATH 182H is also equivalent to MATH 10AB or 20AB. +Beginning Fall 2018 MATH 10C/20C will be replaced with MATH 11 (MATH 160) **No upper division credit.		
<b>Note: Transfer students are required to complete all major prep courses prior to enrolling at UC San Diego. Must complete any sequence courses at same institution to allow for continuity in course material. Major prep courses must be completed with a letter grade of "C" or better. For more information go to: <a href="http://www.biology.ucsd.edu">www.biology.ucsd.edu</a>.</b>		

### BACHELOR OF SCIENCE IN CHEMISTRY & BIOCHEMISTRY WITH A SPECIALIZATION IN BIOINFORMATICS

<b>UCSD</b>	<b>OCC</b>	<b>(01/15:A16-17)</b>
BILD 1 & 2	BIOL 180 & 185	
MATH 20ABC	MATH 180(or 180H)* & 185(or 185H)* & 280(or 280H)+	
MATH 18	MATH 235	
PHYS 2AB	PHYS 185 & 280+	
CHEM 6ABC, 7L	CHEM 180 & 185+	
CHEM 140AB	CHEM 220 & 225**	
CSE 11 <u>or</u> 12	CS 170 <u>or</u> 200	
CSE 12	CS 200	
CSE 21	No Equivalent Course	
*MATH 182H is also equivalent to MATH 20B. **No upper division credit. +Required minimum major prep (will be screened for coursework completed, grades earned and cumulative GPA).		
<b>Note: Transfer students should complete as many of the major prep courses as possible prior to enrolling at UC San Diego. Students must complete any sequence courses at same institution to allow for continuity in course material. Major prep courses must be completed with a letter grade of "C" or better. Students should complete all other transfer courses before taking organic chemistry. For year specific major prep information go to: <a href="http://admissions.ucsd.edu/MajorPrep">http://admissions.ucsd.edu/MajorPrep</a></b>		

## BACHELOR OF SCIENCE IN BIOLOGY - Ecology, Behavior and Evolution

<b>UCSD</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
BILD 1, 2, 3 & 4	BIOL 180 & 185+	
MATH 10ABC/20ABC	MATH 180* & 185* & 280(or 280H)@+	
PHYS 2ABC <u>or</u> PHYS 1ABC w/labs	PHYS 185, 280 & 285 <u>or</u> 130 & 135	
CHEM 6ABC, 7L	CHEM 180 & 185+	
CHEM 140AB	CHEM 220 & 225**	
*MATH 182H is also equivalent to MATH 10B or 20B. **No upper division credit. Not required for the major, but are prerequisites for many upper division biology courses. @In fall 2018 MATH 160 may be taken in place of MATH 280(or 280H). +Required minimum major prep (will be screened for coursework completed, grades earned and cumulative GPA).		
<b>Note: Transfer students should complete all major prep courses prior to enrolling at UC San Diego. Students must complete any sequence courses at same institution to allow for continuity in course material. Major prep courses must be completed with a letter grade of "C" or better. For year specific major prep information go to: <a href="http://admissions.ucsd.edu/MajorPrep">http://admissions.ucsd.edu/MajorPrep</a></b>		

## BACHELOR OF SCIENCE IN GENERAL BIOLOGY

<b>UCSD</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
BILD 1, 2, 3 & 4	BIOL 180 & 185+	
MATH 10ABC/20ABC	MATH 180* & 185* & 280(or 280H)@+	
PHYS 2ABC with labs <u>or</u> PHYS 1ABC w/labs	PHYS 185, 280 & 285 <u>or</u> 130 & 135	
CHEM 6ABC, 7L	CHEM 180 & 185+	
CHEM 140AB	CHEM 220 & 225**	
*MATH 182H is also equivalent to MATH 10B or 20B. **No upper division credit. Not required for the major, but are prerequisites for many upper division biology courses. @In fall 2018 MATH 160 may be taken in place of MATH 280(or 280H). +Required minimum major prep (will be screened for coursework completed, grades earned and cumulative GPA).		
<b>Note: Transfer students should complete all major prep courses prior to enrolling at UC San Diego. Students must complete any sequence courses at same institution to allow for continuity in course material. Major prep courses must be completed with a letter grade of "C" or better. For year specific major prep information go to: <a href="http://admissions.ucsd.edu/MajorPrep">http://admissions.ucsd.edu/MajorPrep</a></b>		

## UNIVERSITY OF CALIFORNIA, SANTA BARBARA

### BACHELOR OF ARTS IN BIOLOGICAL SCIENCES

### BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

### BACHELOR OF SCIENCE IN CELL AND DEVELOPMENTAL BIOLOGY

### BACHELOR OF SCIENCE IN MICROBIOLOGY

### BACHELOR OF SCIENCE IN PHYSIOLOGY

<b>UCSB</b>	<b>OCC</b>	<b>(1/15:A16-17)</b>
MCDB 1A/AL & 1B/BL & EEMB 2 & 3/3L	Either BIOL 180 & 185 <u>or</u> 180 & 182/182L & 183/183L*	
CHEM 1A/AL, 1B/BL, 1C/CL	CHEM 180 & 185	
CHEM 6AL/BL & 109AB	CHEM 220/220L & 225/225L**	
PHYS 6A/AL, 6B/BL, 6C/CL	PHYS 120 & 125 <u>or</u> 130 & 135	
MATH 3AB <u>or</u> 34AB	MATH 180(or 180H) & 185 (or 185H)+ <u>or</u> 140	
PSTAT 5A <u>or</u> 5LS <u>or</u> MATH 4A	MATH 160(or 160H) <u>or</u> No Equivalent Course <u>or</u> MATH 285(or 285H)	
*Entire sequence should be completed prior to transfer. **No upper division credit. +MATH 182H is also equivalent to MATH 3AB.		
<b>Note: All Biological Science applicants are screened on the basis of a 2.7 GPA in chemistry and biology prep courses. Students are strongly advised to complete as many of the major prep courses as possible prior to admission with no grade less than "C". It is also strongly recommended that students complete one year of organic chemistry w/lab, one year of general physics w/lab and one year of calculus or calculus with statistics. At a minimum, students must complete one year of general chemistry w/lab (CHEM 180 &amp; 185) and at least a one-year sequence in biology w/lab. Students are admitted initially to the pre-major. Admission to the full major is contingent upon a GPA of 2.0 or better in pertinent courses at the UC. Admission to the pre-major does not guarantee admission to the full major. For more information go to: <a href="http://www.lifesci.ucsb.edu">www.lifesci.ucsb.edu</a></b>		

## BACHELOR OF SCIENCE IN BIOCHEMISTRY

<b>UCSB</b>	<b>OCC</b>	<b>(1/15:A16-17)</b>
MCDB 1A/AL & 1B/BL & EEMB 2/2L	Either BIOL 180 & 185 <u>or</u> 180 & 182/182L & 183/183L*	
CHEM 1A/AL, 1B/BL, 1C/CL	CHEM 180 & 185	
CHEM 6A/BL & 109AB	CHEM 220/220L & 225/225L**	
PHYS 6A/AL, 6B/BL, 6C/CL <u>or</u> PHYS 1, 2, 3, 3/3L, 4/4L	PHYS 120 & 125 <u>or</u> 130 & 135 <u>or</u> PHYS 185, 280, 285	
MATH 3AB	MATH 180(or 180H) & 185 (or 185H)+	
MATH 4A	MATH 285(or 285H)	
MATH 6A	MATH 280(or 280H)	
*Entire sequence should be completed prior to transfer. **No upper division credit. +MATH 182H is also equivalent to MATH 3AB.		
<b>Note: Students are strongly advised to complete as many of the major prep courses as possible prior to admission with no grade less than "C". Students are admitted initially to pre-Chemistry. Admission to the full major is contingent upon a GPA of 2.0 or better in pertinent courses at the UC. Admission to the pre-major does not guarantee admission to the full major. For more information go to: <a href="http://www.chem.ucsb.edu">www.chem.ucsb.edu</a>.</b>		

## BACHELOR OF SCIENCE IN BIOCHEMISTRY – Molecular Biology

<b>UCSB</b>	<b>OCC</b>	<b>(1/15:A16-17)</b>
MCDB 1A/AL & 1B/BL & EEMB 2/2L	Either BIOL 180 & 185 <u>or</u> 180 & 182/182L & 183/183L*	
CHEM 1A/AL, 1B/BL, 1C/CL	CHEM 180 & 185	
CHEM 6A/BL & 109AB	CHEM 220/220L & 225/225L**	
PHYS 6A/AL, 6B/BL, 6C/CL	PHYS 120 & 125 <u>or</u> 130 & 135	
MATH 3AB	MATH 180(or 180H) & 185 (or 185H)+	
MATH 4A	MATH 285(or 285H)	
MATH 6A	MATH 280(or 280H)	
*Entire sequence should be completed prior to transfer. **No upper division credit. +MATH 182H is also equivalent to MATH 3AB.		
<b>Note: All Biological Science applicants are screened on the basis of a 2.7 GPA in chemistry and biology prep courses. Students are strongly advised to complete as many of the major prep courses as possible prior to admission with no grade less than "C". It is also strongly recommended that students complete one year of organic chemistry w/lab, one year of general physics w/lab and one year of calculus or calculus with statistics. At a minimum, students must complete one year of general chemistry w/lab (CHEM 180 &amp; 185) and at least a one-year sequence in biology w/lab. Students are admitted initially to the pre-major. Admission to the full major is contingent upon a GPA of 2.0 or better in pertinent courses at the UC. Admission to the pre-major does not guarantee admission to the full major. For more information go to: <a href="http://www.lifesci.ucsb.edu">www.lifesci.ucsb.edu</a></b>		

## BACHELOR OF SCIENCE IN ECOLOGY AND EVOLUTION

<b>UCSB</b>	<b>OCC</b>	<b>(1/15:A16-17)</b>
MCDB 1A/AL & 1B/BL & EEMB 2 & 3/3L	Either BIOL 180 & 185 <u>or</u> 180 & 182/182L & 183/183L*	
CHEM 1A/AL, 1B/BL, 1C/CL	CHEM 180 & 185	
PHYS 6A/AL, 6B/BL, 6C/CL	PHYS 120 & 125 <u>or</u> 130 & 135	
MATH 3AB <u>or</u> 34AB	MATH 180(or 180H) & 185 (or 185H)+ <u>or</u> 140	
PSTAT 5A <u>or</u> 5LS <u>or</u> MATH 4A	MATH 160(or 160H) <u>or</u> No Equivalent Course <u>or</u> MATH 285(or 285H)	
*Entire sequence should be completed prior to transfer. +MATH 182H is also equivalent to MATH 3AB.		
<b>Note: All Biological Science applicants are screened on the basis of a 2.7 GPA in chemistry and biology prep courses. Students are strongly advised to complete as many of the major prep courses as possible prior to admission with no grade less than "C". It is also strongly recommended that students complete one year of organic chemistry w/lab, one year of general physics w/lab and one year of calculus or calculus with statistics. At a minimum, students must complete one year of general chemistry w/lab (CHEM 180 &amp; 185) and at least a one-year sequence in biology w/lab. Students are admitted initially to the pre-major. Admission to the full major is contingent upon a GPA of 2.0 or better in pertinent courses at the UC. Admission to the pre-major does not guarantee admission to the full major. For more information go to: <a href="http://www.lifesci.ucsb.edu">www.lifesci.ucsb.edu</a>. Organic chemistry may be required at some graduate or professional schools.</b>		

## BACHELOR OF SCIENCE IN PHARMACOLOGY

<b>UCSB</b>	<b>OCC</b>	<b>(1/15:A16-17)</b>
MCDB 1A/AL & 1B/BL & EEMB 2 & 3/3L	Either BIOL 180 & 185 <u>or</u> 180 & 182/182L & 183/183L*	
CHEM 1A/AL, 1B/BL, 1C/CL	CHEM 180 & 185	
CHEM 6A/BL & 109ABC	CHEM 220/220L & 225/225L**	
MATH 3AB <u>or</u> 34AB	MATH 180(or 180H) & 185 (or 185H)+ <u>or</u> 140	
PSTAT 5A <u>or</u> 5LS <u>or</u> MATH 4A <u>or</u> PSY 5	MATH 160(or 160H) <u>or</u> No Equivalent Course <u>or</u> MATH 285(or 285H) <u>or</u> PSYC 160@	
PHYS 6A/AL, 6B/BL, 6C/CL	PHYS 120 & 125 <u>or</u> 130 & 135	
*Entire sequence should be completed prior to transfer. **No upper division credit. +MATH 182H is also equivalent to MATH 3AB. @PSYC 160 will not satisfy IGETC Area 2 - Mathematical Concepts and Quantitative Reasoning. Students wishing to satisfy IGETC Area 2 should take MATH 160(or 160H).		
<b>Note: All Biological Science applicants are screened on the basis of a 2.7 GPA in chemistry and biology prep courses. Students are strongly advised to complete as many of the major prep courses as possible prior to admission with no grade less than "C". It is also strongly recommended that students complete one year of organic chemistry w/lab, one year of general physics w/lab and one year of calculus or calculus with statistics. At a minimum, students must complete one year of general chemistry w/lab (CHEM 180 &amp; 185) and at least a one-year sequence in biology w/lab. Students are admitted initially to the pre-major. Admission to the full major is contingent upon a GPA of 2.0 or better in pertinent courses at the UC. Admission to the pre-major does not guarantee admission to the full major. For more information go to: <a href="http://www.lifesci.ucsb.edu">www.lifesci.ucsb.edu</a>.</b>		

## BACHELOR OF SCIENCE IN ZOOLOGY

<b>UCSB</b>	<b>OCC</b>	<b>(1/15:A16-17)</b>
MCDB 1A/AL & 1B/BL & EEMB 2 & 3/3L	Either BIOL 180 & 185 <u>or</u> 180 & 182/182L & 183/183L*	
CHEM 1A/AL, 1B/BL, 1C/CL	CHEM 180 & 185	
PHYS 6A/AL, 6B/BL, 6C/CL	PHYS 120 & 125 <u>or</u> 130 & 135	
MATH 3AB <u>or</u> 34AB	MATH 180(or 180H) & 185 (or 185H)+ <u>or</u> 140	
PSTAT 5A <u>or</u> 5LS <u>or</u> MATH 4A	MATH 160(or 160H) <u>or</u> No Equivalent Course <u>or</u> MATH 285(or 285H)	
*Entire sequence should be completed prior to transfer. +MATH 182H is also equivalent to MATH 3AB.		
<b>Note: All Biological Science applicants are screened on the basis of a 2.7 GPA in chemistry and biology prep courses. Students are strongly advised to complete as many of the major prep courses as possible prior to admission with no grade less than "C". It is also strongly recommended that students complete one year of organic chemistry w/lab, one year of general physics w/lab and one year of calculus or calculus with statistics. At a minimum, students must complete one year of general chemistry w/lab (CHEM 180 &amp; 185) and at least a one-year sequence in biology w/lab. Students are admitted initially to the pre-major. Admission to the full major is contingent upon a GPA of 2.0 or better in pertinent courses at the UC. Admission to the pre-major does not guarantee admission to the full major. For more information go to: <a href="http://www.lifesci.ucsb.edu">www.lifesci.ucsb.edu</a>. Organic chemistry may be required at some graduate or professional schools.</b>		

## CALIFORNIA STATE UNIVERSITY, FULLERTON

### BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCE

Options: Cell & Developmental, Ecology & Evolutionary, Molecular Biology & Biotechnology, Plant

<b>CSUF</b>	<b>OCC</b>	<b>(1/15:A15-16)</b>
<b>Required Core Courses</b>		
BIOL 171	BIOL 185 <u>or</u> 182/182L & 183/183L	
BIOL 172	BIOL 180	
BIOL 273	No Equivalent Course	
BIOL 274	BIOL 280	
<b>Supporting Courses</b>		
CHEM 120A	CHEM 180	
CHEM 120B	CHEM 185	
CHEM 301AB & 302AB	CHEM 220/220L* & 225/225L*	
PHYS 211/211L	PHYS 120 <u>or</u> 130	
		<b>Continued</b>

<b>CSUF</b>	<b>OCC</b>	<b>(1/15:A15-16)</b>
PHYS 212/212L	PHYS 125 <u>or</u> 135	
MATH 130 & 338 <u>or</u> MATH 150AB	MATH 140 & No Equivalent Course <u>or</u> MATH 180(or 180H) & 185(or 185H)	
*No upper division unit credit. Subject credit only.		
<b>Note: Courses must be taken for a letter grade. No credit will be granted for C- grades in biology courses. To qualify for the BS degree students must have a 2.0 GPA in all required biology and supporting courses. It is recommended to complete the following courses prior to transfer: one year of biology, one semester of calculus, and one year of general chemistry.</b>		

## CALIFORNIA STATE UNIVERSITY, LONG BEACH

### BACHELOR OF SCIENCE IN BIOLOGY

Options: Biology Education, General Biology, Molecular Cell Biology & Physiology, Organismal Biology

<b>CSULB</b>	<b>OCC</b>	<b>(10/14:A16-17)</b>
<b>All Options:</b>		
BIOL 211 & 213	BIOL 185 <u>or</u> BIOL 182/182L & 183/183L+	
BIOL 212	BIOL 180+	
BIOL 260	No Equivalent Course+	
CHEM 111AB	CHEM 180 & 185+	
CHEM 220AB & 223AB	CHEM 220/220L & 225/225L**+	
MATH 119A <u>or</u> 122	MATH 140 <u>or</u> 180(or 180H)*+	
PHYS 100AB <u>or</u> 151 & 152	PHYS 120 & 125 <u>or</u> 130 & 135 <u>or</u> PHYS 185 & 280	
<b>For Biology Education add:</b>		
ASTR 100	ASTR 100(or 100H)	
GEOL 102 & 104 <u>or</u> GEOL 106	GEOL 105(or 105H) & 105L(or 105M) <u>or</u> 110 <u>or</u> GEOL 106	
MICR 200 <u>or</u> 211	BIOL 210	
*MATH 182H is also equivalent to MATH 122 or MATH 122 & 123. +Grade of "C" or better is required. **Complete entire sequence.		
<b>Note: This program is impacted. Students must complete 60 units and the CSU GE requirements in Written and Oral Communication, Critical Thinking and Mathematics/Quantitative Reasoning with a grade of "C" or better by the end of the prior spring term for fall admission or by the end of the prior summer for spring admission. It is strongly recommended that sequence chemistry courses be completed at a single institution. Students must achieve at least a 2.0 GPA in all major courses. See CSULB catalog for major specific admission criteria: <a href="http://web.csulb.edu/depts/enrollment/admissions/transfer-major-criteria/index.html">http://web.csulb.edu/depts/enrollment/admissions/transfer-major-criteria/index.html</a></b>		

### BACHELOR OF SCIENCE IN MICROBIOLOGY

<b>CSULB</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
BIOL 211	BIOL 185 <u>or</u> BIOL 182/182L & 183/183L+	
BIOL 212	BIOL 180+	
BIOL 260	No Equivalent Course+	
CHEM 111AB	CHEM 180 & 185+	
CHEM 220AB & 223AB	CHEM 220/220L & 225/225L**+	
MATH 119A <u>or</u> 122	MATH 140 <u>or</u> 180(or 180H)*+	
PHYS 100AB <u>or</u> 151 & 152	PHYS 120 & 125 <u>or</u> 130 & 135 <u>or</u> PHYS 185 & 280	
*MATH 182H is also equivalent to MATH 122 or MATH 122 & 123. **Complete entire sequence. +Grade of "C" or better is required.		
<b>Note: This program is impacted. Students must complete 60 units and the CSU GE requirements in Written and Oral Communication, Critical Thinking and Mathematics/Quantitative Reasoning with a grade of "C" or better by the end of the prior spring term for fall admission or by the end of the prior summer for spring admission. It is strongly recommended that sequence chemistry courses be completed at a single institution. Students must achieve at least a 2.0 GPA in all major courses. See CSULB catalog for major specific admission criteria: <a href="http://web.csulb.edu/depts/enrollment/admissions/transfer-major-criteria/index.html">http://web.csulb.edu/depts/enrollment/admissions/transfer-major-criteria/index.html</a></b>		

# CAL POLY, POMONA

## BACHELOR OF SCIENCE IN BIOLOGY

Options: Botany, General Biology, Zoology

CPP	OCC	(10/15:A16-17)
<b>All Options:</b>		
<b>Required Core Courses</b>		
BIO 121/L, 122/L, 123/L	BIOL 180 & 185	
BIO 211/211L	No Equivalent Courses	
<b>Required Support Courses</b>		
CHM 121/L,122/L,123/L	CHEM 180 & 185	
CHM 201 & 250L	CHEM 220/220L <u>or</u> 225/225L	
PHY 121/L,122/L,123/L <u>or</u> PHY 131/L,132/L,133/L	PHYS 120 & 125 <u>or</u> PHYS 130 & 135 & 285 <u>or</u> 185, 280 & 285	
STA 120	MATH 160(or 160H)	
ENGL 110	ENGL 100	
ENGL 130 <u>or</u> PHL 202	ENGL 101(or 101H) <u>or</u> 102(or 102H) <u>or</u> MATH 220 <u>or</u> PHIL 150 <u>or</u> 220	
MAT 120	MATH 140	
FN 203 <u>or</u> PSY 201 <u>or</u> PSY 210	FN 136 <u>or</u> HLED 136 <u>or</u> PSYC 100(or 100H) <u>or</u> 110 <u>or</u> 250	
<b>For Botany add:</b>		
BOT 201/201L	BIOL 183/183L	
MIC 201/201L	BIOL 210	
PLT 231 & 231L	No Equivalent Courses	
<b>For General Biology add:</b>		
BOT 201/201L	BIOL 183/183L	
MIC 201/201L	BIOL 210	
ZOO 201 & 201L	No Equivalent Courses	
<b>For Zoology add:</b>		
ZOO 237/L & 238/L	BIOL 182 & 182L	
<b>Note: This major is impacted. See CPP catalog for supplemental major specific admission criteria:</b> <a href="http://www.cpp.edu/~admissions/undergraduate/transfer/before/impacted-majors.shtml">http://www.cpp.edu/~admissions/undergraduate/transfer/before/impacted-majors.shtml</a>		

## BACHELOR OF SCIENCE IN BIOLOGY

Option: Microbiology

CPP	OCC	(10/15:A16-17)
<b>All Options:</b>		
<b>Required Core Courses</b>		
BIO 121/L, 122/L, 123/L	BIOL 180 & 185	
MIC 201/201L	BIOL 210	
BIO 211/211L	No Equivalent Courses	
<b>Required Support Courses</b>		
CHM 121/L,122/L,123/L	CHEM 180 & 185	
CHM 221/221L	No Equivalent Courses	
Elective	CHEM 220/220L <u>or</u> 225/225L	
PHY 121/L, 122/L, 123/L <u>or</u> PHY 131/L, 132/L, 133/L	PHYS 120 & 125 <u>or</u> PHYS 130 & 135 & 285 <u>or</u> 185, 280 & 285	
ENGL 110	ENGL 100	
ENGL 130 <u>or</u> PHL 202	ENGL 101(or 101H) <u>or</u> 102(or 102H) <u>or</u> MATH 220 <u>or</u> PHIL 150 <u>or</u> 220	
MAT 120	MATH 140	
FN 203 <u>or</u> PSY 201 <u>or</u> PSY 210	FN 136 <u>or</u> HLED 136 <u>or</u> PSYC 100(or 100H) <u>or</u> 110 <u>or</u> 250	
*Petition Chemistry department after transfer for subject/content credit only.		
<b>Note: This major is impacted. See CPP catalog for supplemental major specific admission criteria:</b> <a href="http://www.cpp.edu/~admissions/undergraduate/transfer/before/impacted-majors.shtml">http://www.cpp.edu/~admissions/undergraduate/transfer/before/impacted-majors.shtml</a>		

# SAN DIEGO STATE UNIVERSITY

## BACHELOR OF ARTS/SCIENCE IN BIOLOGY

<b>SDSU</b>	<b>OCC</b>	<b>(10/05:A16-17)</b>
BIOL 203/203L	BIOL 180	
BIOL 204/204L	BIOL 182/182L & 183/183L	
BIOL 215 <u>or</u> PSY 280	No Equivalent Courses	
CHEM 200 & 201	CHEM 180 & 185	
CHEM 232/232L	CHEM 220 & 220L	
MATH 124 <u>or</u> MATH 150	No Equivalent Course <u>or</u> MATH 180(or 180H) & 185(or 185H)*	
PHYS 180A & 182A	PHYS 120 <u>or</u> 130	
PHYS 180B & 182B	PHYS 125 <u>or</u> 135	
<b>For BA only:</b> Three semesters of a foreign language or four years of one language in high school with grades of "C" or better.		
*MATH 182H is also equivalent to MATH 150.		
<b>Note:</b> This is an impacted program. See SDSU catalog for admission criteria. All listed courses must be taken for a letter grade of "C" or higher and completed with a minimum GPA of 2.80, as well as a cumulative GPA of 2.8.		

## BACHELOR OF ARTS/SCIENCE IN MICROBIOLOGY

<b>SDSU</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
BIOL 203/203L	BIOL 180	
BIOL 204/204L	BIOL 182/182L & 183/183L	
BIOL 215	No Equivalent Course	
CHEM 200 & 201	CHEM 180 & 185	
CHEM 232/232L	CHEM 220 & 220L	
MATH 124 <u>or</u> MATH 150	No Equivalent Course <u>or</u> MATH 180(or 180H) & 185(or 185H)*	
PHYS 180A & 182A	PHYS 120 <u>or</u> 130	
PHYS 180B & 182B	PHYS 125 <u>or</u> 135	
<b>For BA only:</b> Three semesters of a foreign language or four years of one language in high school with grades of "C" or better.		
*MATH 182H is also equivalent to MATH 150.		
<b>Note:</b> This is an impacted program. See SDSU catalog for admission criteria. All listed courses must be taken for a letter grade of "C" or higher and completed with a minimum GPA of 2.80, as well as a cumulative GPA of 2.8.		

## CAL POLY, SAN LUIS OBISPO

### BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES (College of Science and Mathematics)

Options: Anatomy/Physiology, Ecology, Wildlife & Biodiversity Conservation, General Biology, Molecular & Cellular

<b>CPSLO</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
<b>All Options:</b>		
<b>Major Courses</b>		
BIO 160, 161, 162	BIOL 180, 182/182L & 183/183L	
BIOL 263	No Equivalent Course	
<b>Support Courses</b>		
CHEM 127, 128, 129	CHEM 180 & 185	
CHEM 216	CHEM 220 & 220L *	
MATH 161	MATH 180(or 180H)** <u>or</u> 140	
MATH 162	MATH 185(or 185H)**	
PHYS 121, 122, 123	PHYS 120 & 125 <u>or</u> 130 & 135	
STAT 218	MATH 160 <u>or</u> PSYC 160	
<b>For Anatomy and Physiology add:</b>		
MCRO 224	BIOL 210	
MCRO 225	No Equivalent Course	
CHEM 217	CHEM 225 & 225L *	
CHEM 218, 220 & 223	No Equivalent Courses	
<b>For General Biology add:</b>		<b>Continued</b>

<b>CPSLO</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
MCRO 224	BIOL 210	
<b>For Ecology add:</b>		
GEOG 250/ERSC 250	GEOG 180(or 180H)	
MCRO 224	BIOL 210	
NR/LA 218	No Equivalent Courses	
SS 121	No Equivalent Course	
<b>For Molecular and Cellular add:</b>		
CHEM 217	CHEM 225 & 225L*	
CHEM 220	No Equivalent Course	
MCRO 224	BIOL 210	
CHEM 218 & 223	No Equivalent Courses	
<b>For Wildlife &amp; Biodiversity Conservation add:</b>		
NR 141 & 142	No Equivalent Courses	
NR 218/LA 218	No Equivalent Courses	
*No upper division credit.		
**MATH 182H is also equivalent to MATH 161 & 162.		
Note: Major specific selection criteria for transfer students can be found at: <a href="http://admissions.calpoly.edu/applicants/transfer/criteria.html">http://admissions.calpoly.edu/applicants/transfer/criteria.html</a>		

## **BACHELOR OF SCIENCE IN MICROBIOLOGY**

<b>CPSLO</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
<b>All Options:</b>		
<b>Major Courses</b>		
BIO 160	No Equivalent Course	
BIO 161	No Equivalent Course	
BIOL 263	No Equivalent Course	
MCRO 224	BIOL 210	
MCRO 225	No Equivalent Course	
<b>5 units from:</b>	<b>5 units from:</b>	
FSN 230	No Equivalent Course	
FSN 275	No Equivalent Course	
ASCI 203	No Equivalent Course	
BIO 162	No Equivalent Course	
CHEM 218	No Equivalent Course	
CHEM 223	No Equivalent Course	
MATH 162	MATH 185(or 185H)**	
<b>Support Courses</b>		
CHEM 127, 128, 129	CHEM 180 & 185	
CHEM 216	CHEM 220 & 220L*	
CHEM 217	CHEM 225 & 225L*	
CHEM 220	No Equivalent Course	
MATH 161	MATH 180(or 180H)** <u>or</u> 140	
PHYS 121, 122, 123	PHYS 120 & 125 <u>or</u> 130 & 135	
STAT 218	MATH 160 <u>or</u> PSYC 160	
*No upper division credit.		
**MATH 182H is also equivalent to MATH 161 & 162.		
Note: Major specific selection criteria for transfer students can be found at: <a href="http://admissions.calpoly.edu/applicants/transfer/criteria.html">http://admissions.calpoly.edu/applicants/transfer/criteria.html</a>		

# CALIFORNIA STATE UNIVERSITY, SAN MARCOS

## BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

<b>CSUSM</b>	<b>OCC</b>	<b>(08/08:A16-17)</b>
BIOL 210	BIOL 180	
BIOL 211	BIOL 185	
BIOL 212	No Equivalent Course	
BIOL 215	MATH 160 <u>or</u> PSYC 160	
CHEM 150/150L	CHEM 180	
CHEM 160	CHEM 185	
CHEM 201/201L	CHEM 220 & 220L	
MATH 160	MATH 180(or 180H)	
PHYS 101 & 102 <u>or</u> PHYS 205 & 206	No Equivalent Courses* <u>or</u> No Equivalent Courses*	
*Any physics sequence with labs will meet this requirement.		
<b>Note: All courses for the major must be completed with a grade of "C" or better.</b>		

## BACHELOR OF SCIENCE IN BIOCHEMISTRY

<b>CSUSM</b>	<b>OCC</b>	<b>(09/08:A16-17)</b>
MATH 160	MATH 180(or 180H)	
MATH 162	MATH 185(or 185H)	
PHYS 201	PHYS 185	
PHYS 202	No Equivalent Course	
BIOL 210	BIOL 180	
BIOL 211	BIOL 185	
CHEM 150/150L	CHEM 180	
CHEM 160	CHEM 185	
CHEM 201/201L	CHEM 220 & 220L	
CHEM 202/202L	CHEM 225 & 225L	
CHEM 275	No Equivalent Courses	
<b>Note: All courses for the major must be completed with a grade of "C" or better.</b>		

## BACHELOR OF SCIENCE IN BIOTECHNOLOGY

<b>CSUSM</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
CHEM 150/150L	CHEM 180	
CHEM 160	CHEM 185	
CHEM 201/201L	CHEM 220 & 220L	
CHEM 202	CHEM 225	
MATH 160	MATH 180(or 180H)	
PHYS 205 & 206	No Equivalent Courses	
PSYC 100 <u>or</u> SOC 101	PSYC 100(or 100H) <u>or</u> SOC 100	
BIOL 210	BIOL 180	
BIOL 211	BIOL 185	
BIOL 215	MATH 160(or 160H) <u>or</u> PSYC 160	
ACCT 201	ACCT 101	
ACCT 202	ACCT 102	
<b>Note: All courses for the major must be completed with a grade of "C" or better.</b>		

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## CHAPMAN UNIVERSITY (Orange)

### BACHELOR OF SCIENCE IN BIOLOGICAL STUDIES

<b>Chapman</b>	<b>OCC</b>	<b>(1/09:A09-10)</b>
BIOL 204	BIOL 180(or 180H)	<b>Continued</b>

<b>Chapman</b>	<b>OCC</b>	<b>(1/09:A09-10)</b>
BIOL 205	BIOL 185	
BIOL 208/209	Under Review	
CHEM 140 & 150	CHEM 180 & 185	
MATH 110	MATH 180(or 180H)*	
MATH 111	MATH 185(or 185H)*	
MATH 203	MATH 160(or 160H)	
PHYS 107 & 108	PHYS 130 & 135	
CPSC 230	Take at Chapman	
*MATH 182H is also equivalent to MATH 110 & 111.		

## UNIVERSITY OF SOUTHERN CALIFORNIA

**Note:** Students may fulfill four of the six required GE requirements with transfer courses taken before starting USC (see USC GE requirements). Credit for courses is not granted if (1) the course is taken before high school graduation, (2) the grade is lower than C-, (3) is a lab science or foreign language course and is not taken in a traditional classroom setting, (4) is offered through "study abroad", (5) repeats credit from another college course or from an AP or IB exam.

### BACHELOR OF ARTS IN BIOLOGICAL SCIENCES

<b>USC</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
Composition/Writing	ENG 101 (or 101H) <u>or</u> 102 (102H)*	
Global Perspectives	ANTH 150 <u>or</u> PSCI 110 <u>or</u> SOC 150	
Traditions & Historical	<b>One course from:</b> ARCH 290(or 290H), 296(or 296H), ART 100(or 100H), 101(or 101H), 103, ENGL 176(or 176H), HIST 141, 161(or 161H), 162(or 162H), 170(or 170H), 175(or 175H), 180(or 180H), 185(or 185H), PHIL 125, PSCI 188, RLST 110, 140, 150, THEA 101	
BISC 120 & 220	BIOL 180 & 182/182L & 183/183L <u>or</u> 180 & 185	
CHEM 105AB	CHEM 180 & 185	
CHEM 322AB	CHEM 220 & 220L & 225 & 225L	
MATH 125	MATH 180(or 180H)	
PHYS 135AB <u>or</u> PHYS 151 & 152	PHYS 120 & 125 <u>or</u> 130 & 135 <u>or</u> PHYS 185 & 280 & 285	
*ENGL 100 is a prerequisite to these courses.		

### BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES

<b>USC</b>	<b>OCC</b>	<b>(10/14:A16-17)</b>
Composition/Writing	ENG 101 (or 101H) <u>or</u> 102 (102H)*	
Global Perspectives	ANTH 150 <u>or</u> PSCI 110 <u>or</u> SOC 150	
Traditions & Historical	<b>One course from:</b> ARCH 290(or 290H), 296(or 296H), ART 100(or 100H), 101(or 101H), 103, ENGL 176(or 176H), HIST 141, 161(or 161H), 162(or 162H), 170(or 170H), 175(or 175H), 180(or 180H), 185(or 185H), PHIL 125, PSCI 188, RLST 110, 140, 150, THEA 101	
BISC 120 & 220	BIOL 180 & 182/182L & 183/183L <u>or</u> 180 & 185	
CHEM 105AB	CHEM 180 & 185	
CHEM 322AB	CHEM 220 & 220L & 225 & 225L	
MATH 125	MATH 180(or 180H)	
Statistics	No Equivalent Course	
PHYS 135AB <u>or</u> PHYS 151 & 152	PHYS 120 & 125 <u>or</u> 130 & 135 <u>or</u> PHYS 185 & 280 & 285	
*ENGL 100 is a prerequisite to these courses.		

### BACHELOR OF SCIENCE IN BIOCHEMISTRY

<b>USC</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
Composition/Writing	ENG 101 (or 101H) <u>or</u> 102 (102H)*	
Global Perspectives	ANTH 150 <u>or</u> PSCI 110 <u>or</u> SOC 150	<b>Continued</b>

<b>USC</b>	<b>OCC</b>	<b>(10/15:A16-17)</b>
Traditions & Historical	<b>One course from:</b> ARCH 290(or 290H), 296(or 296H), ART 100(or 100H), 101(or 101H), 103, ENGL 176(or 176H), HIST 141, 161(or 161H), 162(or 162H), 170(or 170H), 175(or 175H), 180(or 180H), 185(or 185H), PHIL 125, PSCI 188, RLST 110, 140, 150, THEA 101	
BISC 120 & 220	BIOL 180 & 182/182L & 183/183L <u>or</u> 180 & 185	
CHEM 105AB	CHEM 180 & 185	
CHEM 322AB	CHEM 220 & 220L & 225 & 225L	
MATH 125	MATH 180(or 180H)+	
MATH 126	MATH 185(or 185H)**	
MATH 226	MATH 280(or 280H)	
PHYS 135AB <u>or</u> PHYS 151 & 152	PHYS 120 & 125 <u>or</u> 130 & 135 <u>or</u> PHYS 185 & 280 & 285	
*ENGL 100 is a prerequisite to these courses.		
**MATH 182H is also equivalent to MATH 126.		
+Subject credit for MATH 180 can be earned by completion of MATH 185(or 185H).		

**ADDITIONAL AGREEMENTS ARE AVAILABLE ON THE INTERNET FOR THE FOLLOWING SCHOOLS AT:**

[www.assist.org](http://www.assist.org)

<b>Campus</b>	<b>Campus</b>
UC Davis	UC Merced
UC Santa Cruz	CSU Bakersfield
CSU Channel Islands	CSU Chico
CSU Dominguez Hills	CSU East Bay
CSU Fresno	Humboldt State University
CSU Monterey Bay	CSU Northridge
CSU San Bernardino	Sacramento State
San Francisco State University	San Jose State University
Sonoma State	CSU Stanislaus