To be adopted:

Proposed changes to the B.A. and B.S. in Biology

PRESENT:

Major
The Department of Evolution, Ecology, and Organismal Biology offers B.A. and B.S. degrees in Biology. Both programs are based on the conviction that broad undergraduate training in biology, mathematics and the physical sciences, together with study in the humanities and social sciences, are fundamental to the education of a biologist. In addition to English composition, humanities, social sciences and the Life Sciences core curriculum (see below, Major Requirements), both degrees require 36 units of upper-division (numbered 100-199) biology courses. The degrees differ in the humanities and social sciences requirements; also 16 units of a foreign language are required for the B.A., whereas the B.S. requires 16 additional units in substantive courses in biology or related fields.

The research and teaching of the Department of Evolution, Ecology, and Organismal Biology includes different levels (e.g., molecules, cells, organisms, populations, communities) and processes (e.g., development, evolution) of biological organization. An overview is presented in the introductory courses (BIOL 005A, BIOL 05LA, BIOL 005B, and BIOL 005C), and emphasis is placed on the unifying principles of the discipline.

Because of the diversity within biology and the wide range of career options, much latitude is allowed in selecting upper-division biology courses for the 36 units required for the major. Each student can select courses and plan a program of study to meet her/his specific interests and career goals. For assistance with this, faculty advisors are available in The Department of Evolution, Ecology, and Organismal Biology. The section below, Programs of Specialization, is provided as a guide for course selection for

PROPOSED:

No Change
graduate schools, medical and health science professional schools and the broad range of careers that are possible with the Biology major.

The 36 upper-division units are selected from a list which includes courses offered by the Department of Evolution, Ecology, and Organismal Biology (BIOL 100-199) and a limited number of courses in Biochemistry (BCH), and Cell Biology and Neuroscience (CBNS). Qualified under-graduates (GPA 3.0 or above) may participate in graduate-level biology seminar courses with consent of the instructor, and up to 4 units (with letter grade) may be included in the major.

Those who choose to obtain a B.S. degree have as a college requirement an additional 16 units in upper-division biology courses and/or substantive courses in a field or fields related to the major. The purpose of this related area is to add strength and breadth to the major and to meet specific requirements for postgraduate study or a chosen career. The substantive courses in fields related to the major may be lower or upper division, but they usually have science or mathematics prerequisites (e.g., CBNS 120/PSYC 120, CHEM 005, STAT 100A, STAT 100B, MATH 009C).

The Thomas Haider Program at the UCR School of Medicine
Students in the Biology major and all others at UCR are eligible to complete admission requirements and apply for up to 24 positions reserved for UCR students in the UCR School of Medicine. Students eligible to apply to this unique pathway into the UCR medical school, called the Thomas Haider Program at the UCR School of Medicine, are those who attend UCR for at least six consecutive quarters and complete their bachelor’s degree at UCR. Information on this program and general admission to the UCR medical school is provided at medschool.ucr.edu, in the school’s section of this catalog, in the medical school Student Affairs Office (1682A School of Medicine Education Building, (951) 827-4334), and at orientation meetings held at UCR.

University Requirements

No Change
See Undergraduate Studies section.

**College Requirements**
See College of Natural and Agricultural Sciences, Colleges and Programs section.

**Major Requirements**

Some of the following requirements for the major in Biology may also fulfill the College’s breadth requirements. Consult with an academic advisor for course planning.

1. Life Sciences core curriculum (68-72 units)
   a) BIOL 005A, BIOL 05LA or BIOL 020, BIOL 005B, BIOL 005C
   b) CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC
   c) CHEM 008A and 08LA or CHEM 08HA and CHEM 8HLA, CHEM 008B and CHEM 08LB or CHEM 08HB and CHEM 8HLB, CHEM 008C and CHEM 08LC or CHEM 08HC and CHEM 8HLC
   d) MATH 007A or MATH 009A, MATH 007B or MATH 009B
   e) PHYS 002A or PHYS 002HA, PHYS 002B or PHYS 002HB, PHYS 002C or PHYS 002HC, PHYS 02LA or PHYS 02HLA, PHYS 02LB or PHYS 02HLC
   f) STAT 100A
   g) BCH 100 or BCH 110A or BCH 110HA

The core curriculum must be completed with a grade point average of 2.0 or better and no grade lower than “C-.” If a grade of D or F is received in two core curriculum courses, either in separate courses or repetitions of the same course, the student will not be permitted to continue in the major.

2. Upper-division requirements (36 units)

*No Change*
a) BIOL 102  

b) Thirty-two (32) additional Biology units to be taken in consultation with a faculty advisor

3. Other requirements

For the Bachelor of Arts only (0-16 units): The foreign language requirement may be fulfilled by completing level four or the demonstration of equivalent proficiency in one foreign language.

For the Bachelor of Science only (16 units): An additional 16 units in upper-division biology courses and/or substantive courses in a field or fields related to the major. A list of acceptable courses is available in the CNAS Academic Advising Center.

Programs of Specialization

The Life Sciences core curriculum (item 1 above) fulfills many of the requirements for admission to graduate schools in biology or professional schools in the medical and health science fields. In addition to Introductory Genetics (BIOL 102, 4 units), a wide choice is available for the remaining 32 upper-division units required for the Biology major (item 2.b) above) and the 16 additional units related to the field of the major (B.S. degree, item 3 above). Each student selects upper-division and related courses depending on the type of school and career chosen (e.g., education, medicine, pharmacy, dentistry, optometry, veterinary medicine, nursing, physical therapy, public health, graduate school in one of the fields below).

In planning an academic program to prepare for teaching or one of the medical fields, present and prospective Biology majors are referred to relevant topics in the Biological Sciences section of this catalog. That section has information for those planning to attend graduate school in education to obtain a teaching credential (subsection, Teaching Credential) and/or a master’s or Ph.D. degree in education (subsection, Preparation for Graduate School). Also included are guidelines to help students select courses to
prepare for admission to professional schools in the medical field (subsections, Medical Biology, Suggestions for Elective Units for Medical/Health Professions, Admission Requirements for Medical and Health Professional Schools). Additional information about required course work and admission tests (MCAT, OAT, VCAT, PCAT, GRE) can be obtained from (Career Center) and the Health Professions Advising Center (visit Career Center Plaza or hpac.ucr.edu).

Suggested courses of study are provided below for those interested in various biological fields. These programs meet most of the requirements for admission to corresponding graduate schools for those students who wish to pursue a master’s and/or Ph.D. degree. The faculty advisor assists in selecting combinations of courses appropriate for advanced study in the fields below and others. Students considering graduate study are encouraged to do undergraduate research and take courses in computer science and statistics.

In some cases, a course of study differing substantially from the examples given below will best meet the needs of the student. In consultation with a faculty advisor, a student may prepare a program in some other biological specialization such as animal behavior, evolution/development or developmental biology.

**Cell and Molecular Biology**
BIOL 102, BIOL 105, BIOL 107A, BIOL 107B, BIOL 109 or BIOL 153/BCH 153/BPSC 153, CBNS 101 or BIOL 113 and BIOL 114, BIOL 119, BIOL 121/MCBL 121, BIOL 121L/MCBL 121L, BIOL 122/MCBL 122, BIOL 123/MCBL 123/PLPA 123, BIOL 124/MCBL 124, BIOL 128/CBNS 128, BIOL 155/BPSC 155, BIOL 168, BCH 100 or the BCH 110A/BCH 110HA, BCH 110B/BCH 110HB, and BCH 110C/BCH 110HC sequence, BCH 102, CBNS 108, CBNS 150/ENTX 150, CHEM 005, CHEM 109, STAT 100A and STAT 100B

**Ecology and Population Biology**
BIOL 102, BIOL 104/BPSC 104, BIOL 105, BIOL 108, BIOL 116, BIOL 116L, BIOL 117, BIOL 160, BIOL 160L, BIOL 174, either BIOL

**Cell and Molecular Biology**
BIOL 102, BIOL 105, BIOL 107A, BIOL 107B, BIOL 109 or BIOL 153/BCH 153/BPSC 153, CBNS 101 or BIOL 113 and BIOL 114, BIOL 119, BIOL 121/MCBL 121, BIOL 121L/MCBL 121L, BIOL 122/MCBL 122, BIOL 123/MCBL 123/PLPA 123, BIOL 124/MCBL 124, BIOL 128/CBNS 128, BIOL 155/BPSC 155, BIOL 168, BCH 100 or the BCH 110A/BCH 110HA, BCH 110B/BCH 110HB, and BCH 110C/BCH 110HC sequence, BCH 102, CBNS 108, CBNS 150/ENTX 150, CHEM 005, CHEM 109, STAT 101

**Ecology and Population Biology**
BIOL 102, BIOL 104/BPSC 104, BIOL 105, BIOL 108, BIOL 116, BIOL 116L, BIOL 117, BIOL 160, BIOL 160L, BIOL 174, either BIOL
175 or BIOL 143/BPSC 143, the MATH 007A or MATH 009A, MATH 007B or MATH 009B, and MATH 009C sequence, STAT 100A and STAT 100B.

Also recommended: BIOL 151, BIOL 161A, BIOL 163, BPSC 146, MATH 046, BIOL 165/BPSC 165, BIOL 166

Molecular Genetics

Zoology and Physiology
BIOL 100/ENTM 100, BIOL 102, BIOL 105, CBNS 101 or BIOL 113 and BIOL 114, BIOL 151, BIOL 152/GEO 152, BIOL 157, BIOL 159, BIOL 160, BIOL 160L, BIOL 161A, BIOL 161B, BIOL 162/ENTM 162, BIOL 168, BIOL 171, BIOL 171L, BIOL 173/ENTM 173, BIOL 174, BIOL 175, BIOL 178, BCH 100, CBNS 106, CBNS 108, CBNS 116, CBNS 169. Students are also encouraged to take laboratory courses (e.g., BCH 102). Also recommended: a course in ecology (e.g., BIOL 116, BIOL 116L), STAT 100A and STAT 100B

Zoology and Physiology
BIOL 100/ENTM 100, BIOL 102, BIOL 105, CBNS 101 or BIOL 113 and BIOL 114, BIOL 151, BIOL 152/GEO 152, BIOL 157, BIOL 159, BIOL 160, BIOL 160L, BIOL 161A, BIOL 161B, BIOL 162/ENTM 162, BIOL 168, BIOL 171, BIOL 171L, BIOL 173/ENTM 173, BIOL 174, BIOL 175, BIOL 178, BCH 100, CBNS 106, CBNS 108, CBNS 116, CBNS 169. Students are also encouraged to take laboratory courses (e.g., BCH 102). Also recommended: a course in ecology (e.g., BIOL 116, BIOL 116L), STAT 011

Justification:
Program updated to reflect new STAT course renumbering of STAT 100A and STAT 100B to lower division status as STAT 010 and STAT 011. AP Statistics can now count in lieu of STAT 010.

Approvals:
Approved by the faculty of the Department of Biology: April 20, 2021
Approved by the Executive Committee of the College of Natural and Agricultural Sciences: April 27, 2021
Approved by the Committee on Educational Policy: April 29, 2021