

**EXECUTIVE COMMITTEE
COLLEGE OF NATURAL AND AGRICULTURAL SCIENCE**

**REPORT TO RIVERSIDE DIVISION
MAY 23, 2017**

To be adopted:

Proposed changes to the undergraduate major requirements in Biology.

PRESENT:

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, BIOL 005B, BIOL 005C

b) CHEM 001A, CHEM 001B, CHEM 001C, CHEM 01LA, CHEM 01LB, CHEM 01LC

c) ~~CHEM 12A, CHEM 12B, CHEM 12C~~

d) MATH 009A, MATH 009B

e) PHYS 002A, PHYS 002B, PHYS 002C, PHYS 02LA, PHYS 02LB, PHYS 02LC

f) STAT 100A

g) BCH 100 or BCH 110A

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)

a) BIOL 102

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

3. Other requirements

PROPOSED:

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) No Change

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) No Change

f) No Change

g) BCH 100 or BCH 110A

No change

2. Upper-division requirements (36 units)

a) No Change

b) No Change

3. No Change

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).

For the Bachelor of Arts only (0-16 units):

No change.

For the Bachelor of Science only (16 units):

No change.

Programs of Specialization

No change.

Additional information about required course work and admission tests (MCAT, OAT, VCAT, PCAT, GRE) can be obtained from Career Services (Veitch Student Center) and the Health Professions Advising Center (visit 1114 Pierce Hall 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 110B, and BCH 110C 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 175 or BIOL 143/BPSC 143, the MATH 009A, 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

Cell and Molecular Biology

No Change

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

BIOL 102, BIOL 105, BIOL 107A, BIOL 107B, BIOL 108, BIOL 109 or BIOL 153/BCH 153/BPSC 153, BIOL 115, BIOL 121/MCBL 121, BIOL 121L/MCBL 121L, BIOL 122/MCBL 122, BIOL 123/MCBL 123/PLPA 123, BIOL 128/CBNS 128, BIOL 155/BPSC 155, BIOL 168, CBNS 108, CBNS 150/ENTX 150, CBNS 169

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 100

Molecular Genetics

No change

Zoology and Physiology

No Change

Justification:

Math 007A/B is the new Calculus for Life Sciences course that runs parallel to Math 9A/B (and has the same placement criteria as well as prerequisites). MATH007A/B will be considered equivalent in terms of program requirements and in the progression of the first-year calculus sequence. The content of Math 007A/B significantly overlaps with Math 009A/B; credit is only awarded for either Math 007A or Math 009A, and credit is only awarded for either Math 007B or Math 009B. In the majority of CNAS courses, credit is not awarded for BIOL 05LA if it has already been awarded for BIOL 020, and vice-versa. It is our understanding that wherever BIOL 05LA appears as a requirement, the 'or BIOL 020' statement should appear as well, so that students who have successfully completed BIOL 020 can use it as a degree requirement for those programs. The Department of Chemistry has moved forward to separate Organic Chemistry courses into two courses (LEC and LAB) per the Undergraduate Studies Committee's recommendation for 2017 FALL. Also, re numbering the courses to "008" for the Organic Chemistry Lecture Series (CHEM 008A, CHEM 008B, CHEM 008C) and "08" for the Honors Organic Chemistry Lecture (CHEM 08HA, CHEM 08HB, CHEM 08HC) and Organic Chemistry Labs (CHEM 08LA, CHEM 08LB, CHEM 08LC, CHEM 08HA, CHEM 08HB, CHEM 08HC, CHEM 08HLA, CHEM 08HLB, CHEM 08HLC) in order to comply with BANNERS system requirements.

Approvals:

Approved by the faculty of the Department of Biology:
Approved by the Executive Committee of the College of Natural and
Agricultural Sciences:

November 14, 2016

November 13, 2016

Approved by the Committee on Educational Policy:

May 3, 2017