

# BIOLOGY MAJOR REQUIREMENTS

Name: \_\_\_\_\_

## REQUIRED BIOLOGY (20 hrs)

- \_\_\_\_\_ BIOL 1440 Biology I #\*\*
- \_\_\_\_\_ BIOL 1441 Biology II \*\*
- \_\_\_\_\_ BIOL 2490 Genetics \*\*
- \_\_\_\_\_ BIOL 3402 Cell Biology \*\* (MATH 1390 or higher/ (CHEM 2401) [UD Core: I, C]
- \_\_\_\_\_ BIOL 3403 General Ecology (BIOL 1441, Stats course) [UD UCA Core: I]

## REQUIRED CHEMISTRY (16 hrs)

- \_\_\_\_\_ CHEM 1450 College Chemistry I
- \_\_\_\_\_ CHEM 1451 College Chemistry II
- \_\_\_\_\_ CHEM 2401 Organic Chemistry I
- \_\_\_\_\_ CHEM 3411 Organic Chemistry II

## REQUIRED PHYSICS (8 hrs)

- \_\_\_\_\_ PHYS 1410 College Physics I
- \_\_\_\_\_ PHYS 1420 College Physics II

## REQUIRED MATHEMATICS (7 hrs)

- \_\_\_\_\_ MATH 1491 Calculus for the Life Sciences **OR**
- \_\_\_\_\_ MATH 1496 CALCULUS I \*
- \_\_\_\_\_ MATH 2311 Statistical Methods I **OR**
- \_\_\_\_\_ PSYC 2330 Psychological Statistics  
(any LD stats class will work, these are the most common)

**Graduation Requirements for the B.S. Degree in Biology include successful completion of a minimum of 120 hours, which must include 40 hours of upper division (3000-4000 level) and the General Education (LD Core and UD Core) requirements.**

### **Gulf Coast Research Laboratory/Courses:**

Contact Dr. Noyes at (450-5926) or refer to the bottom of the Dept. of Biology page on the UCA Undergraduate Bulletin.

**Teacher Licensure:** A student with a Bachelor of Science degree in Biology who is interested in obtaining teaching licensure in life science/earth science should contact the science education advisor in the Department of Biology (Dr. Bland; 450-5967 or Mr. Mimms; 450-3677) and the Chair of the Department of Teaching and Learning (450-3177).

# If composite ACT is below 21: BIOL 1400 with a C or better **AND** CHEM 1301 or CHEM 1450 with a C or better is a prerequisite for enrollment in BIOL 1440.

\* Require prerequisites. See Undergraduate Bulletin for details at [uca.edu/ubulletin/courses](http://uca.edu/ubulletin/courses).

\*\* A "C" or better grade is or may be required for advancement to subsequent courses.

\*\*\* Up to 4 hrs may count as biology elective credit with dept. approval.

\*\*\*\* Require prerequisites not normally taken by UCA Biology majors.

## BIOLOGY ELECTIVES\*

\* Required Prerequisite (BIOL 2490) Genetics

**Major without a minor: (28 hrs)** chosen from the following courses, including a minimum of four (4) laboratory courses

**Major with a minor or double major: (20 hrs)** chosen from the following courses, including a minimum of four (4) laboratory courses – **Note: minor only has 22 Upper Div Hrs you need 40**

### Cellular and Molecular Concepts Electives:

- \_\_\_\_\_ BIOL 3310 Neuroethology: The Neural Basis of Natural Behaviors
- \_\_\_\_\_ BIOL 3420 General Microbiology
- \_\_\_\_\_ BIOL 4320 Human Neuroscience Methods (BIOL 3402)
- \_\_\_\_\_ BIOL 4340 Immunology (BIOL 3402)
- \_\_\_\_\_ BIOL 4350 Current Topics in Cell Biology (BIOL 3402)
- \_\_\_\_\_ BIOL 4405 Developmental Biology (BIOL 3402)
- \_\_\_\_\_ BIOL 4414 Molecular Mechanisms of Aging (BIOL 3402) [UD UCA Core: Z]
- \_\_\_\_\_ BIOL 4421 Pathogenic Microbiology (BIOL 3402) [UD UCA Core: Z]
- \_\_\_\_\_ BIOL 4425 Experimental Neurobiology (CHEM 1450/PHYS 1420) [UD Core: Z]
- \_\_\_\_\_ BIOL 4530 Experimental Molecular Biology

### Biological Structure and Function Electives:

- \_\_\_\_\_ BIOL 3370 Intro to Neuroscience
- \_\_\_\_\_ BIOL 4311 Pathophysiology \*\*\*\* (BIOL 2405 or 3407 or 4460)
- \_\_\_\_\_ BIOL 4330 Principles of the Cardiovascular System (BIOL 3402)
- \_\_\_\_\_ BIOL 4351 General Pharmacology \*\*\*\* (BIOL 2405 or 2407 or 4460)
- \_\_\_\_\_ BIOL 4360 Endocrinology (BIOL 3402)
- \_\_\_\_\_ BIOL 4370 Current Topics in Physiology (BIOL 3402)
- \_\_\_\_\_ BIOL 4430 Comparative Vertebrate Anatomy
- \_\_\_\_\_ BIOL 4450 Plant Ecophysiology (MATH 2311)
- \_\_\_\_\_ BIOL 4460 Animal Physiology (BIOL 3402)
- \_\_\_\_\_ BIOL 4400 Histology (BIOL 3402)

### Diversity of Organisms Electives:

- \_\_\_\_\_ BIOL 3410 Vertebrate Zoology
- \_\_\_\_\_ BIOL 3470 Plant Biology
- \_\_\_\_\_ BIOL 4401 Invertebrate Zoology
- \_\_\_\_\_ BIOL 4404 Plant Diversity
- \_\_\_\_\_ BIOL 4406 Mammalogy (BIOL 3402, recommended BIOL 3410 or 4415)
- \_\_\_\_\_ BIOL 4407 Ornithology (BIOL 3403, recommended BIOL 3410 or 4415)
- \_\_\_\_\_ BIOL 4418 Biology of the Reptilia (BIOL 3403)
- \_\_\_\_\_ BIOL 4440 Entomology
- \_\_\_\_\_ BIOL 4455 Ichthyology (Biology of Fishes)
- \_\_\_\_\_ BIOL 4461 Parasitology

### Ecology and Evolutionary Biology Electives:

- \_\_\_\_\_ BIOL 3190 Economic Botany Lab (pre or co-req BIOL 3390)
- \_\_\_\_\_ BIOL 3360 Intro. to Marine Biology (CHEM 1451, PHYS 1410)
- \_\_\_\_\_ BIOL 3390 Economic Botany
- \_\_\_\_\_ BIOL 4415 Mechanisms of Evolution
- \_\_\_\_\_ BIOL 4435 Animal Behavior (CHEM 1451, MATH 2311) [UD UCA Core: Z]
- \_\_\_\_\_ BIOL 4442 Restoration Ecology: Principles and App. (BIOL 3403) [UD Core: Z]
- \_\_\_\_\_ BIOL 4465 Environ. Toxicology (CHEM1451, MATH2311, PSYC3312) [UD Core:Z]
- \_\_\_\_\_ BIOL 4480 History of Life
- \_\_\_\_\_ ENVR 3410 Environmental Theory and Appl. (SCI 3410) [UD Core: D,C]

### Additional Qualified Electives:

- \_\_\_\_\_ BIOL 3315 Women/Minorities in STEM [UD Core: D]
- \_\_\_\_\_ BIOL 4V00 Field Studies in Biology
- \_\_\_\_\_ BIOL 4195 Biology Colloquium (BIOL 3402 or 3403) [UD UCA Core: Z]
- \_\_\_\_\_ BIOL 4250 Scanning Electron Microscopy & Microanalysis
- \_\_\_\_\_ BIOL 4445 Biometry (MATH 2311)
- \_\_\_\_\_ BIOL 3V45 Internship \*\*\*
- \_\_\_\_\_ BIOL 4V55 Independent Study \*\*\*
- \_\_\_\_\_ BIOL 4V85 Undergraduate Research \*\*\* [UD UCA Core: Z]
- \_\_\_\_\_ BIOL 4V90 Special Topics in Biology \*\*\*
- \_\_\_\_\_ CHEM 4320/4121 Biochemistry I & Lab (CHEM 3411)
- \_\_\_\_\_ PHYS 3412 Introduction to Biophysics (PHYS 1420 or P HYS 1442; and MATH 1491 or MATH 1496)