

## **BIOL Courses (Biology)**

The first number is course level (1 = freshman, 2 = sophomore, 3 = junior, 4 = senior, 5 = graduate).

The middle two numbers are identifiers specific to the course

The last number is the number of credit hours

BIOL 1063 Introduction to Biological Science

**A.C.T.S. Equivalent Course # BIOL 1004 when combined with BIOL 1071 Introduction to Biological Sciences Lab**

3 credits: 3 hours lecture

Corequisite: ENGL 1013

Basic concepts of biology: cell and molecular biology, genetics, evolution, and ecology and the relevance of these topics to current events and issues. Designed for the non-science major.

BIOL 1071 Introduction to Biological Science Lab

**A.C.T.S. Equivalent Course # BIOL 1004 when combined with BIOL 1063 Introduction to Biological Sciences**

1 credit: 2 hours lab

Corequisite: ENGL 1013

Basic studies of plants and animals, cells, biochemistry, metabolism, and inheritance, designed to illustrate and complement concepts discussed in BIOL 1063. Designed for the non-science major.

BIOL 1102 Medical Terminology

2 Credits: 2 hours lecture

Prerequisite: Grade of "C" or above in ENGL 133, an English ACT of 19 or comparable test score, or instructor's permission

A study of the language of medicine including word construction, definition, and use of terms related to all areas of medical science, focusing on the human body system.

BIOL 2041 Principles of Biology I Lab

1 credit: 2 hours lab

Corequisite: BIOL 2053

Laboratory exercises and demonstrations on the chemical basis of life, cell structure and function, metabolism, and genetics. Designed for biology and other life science majors or minors.

BIOL 2053 Principles of Biology I

3 credits: 3 hours lecture

Prerequisites: ACT composite of 22 or BIOL 1063 with a grade of "C" or above

The chemical basis of life, cell structure and function, metabolism, and genetics. Designed for biology and other life science majors or minors.

BIOL 2083 Principles of Biology II

**A.C.T.S. Equivalent Course # BIOL 1014 when combined with BIOL 2091 Principles of Biology II Lab**

3 credits: 3 hours lecture

Prerequisites: BIOL 2053 and BIOL 2041, each with a grade of "C" or above

Evolution, diversity, and ecology of organisms. Designed for biology and other life science majors or minors.

BIOL 2091 Principles of Biology II Lab

**A.C.T.S. Equivalent Course # BIOL 1014 when combined with BIOL 2083 Principles of Biology II**

1 credit: 2 hours lab

Corequisite: BIOL 2083

Laboratory exercises and demonstrations on animal and plant diversity, as well as structure, function, and behavior of these organisms. Designed for biology and other life science majors or minors.

BIOL 2143 General Botany

**A.C.T.S. Equivalent Course # BIOL 1034 when combined with BIOL 2071 General Botany Lab**

3 credits: 3 hours lecture

Corequisite: ENGL 1013, BIOL 1063 or BIOL 2083 recommended

Structure, physiology, and phylogeny of plants, fungi, and plant-like protista.

BIOL 2153 General Zoology

**A.C.T.S. Equivalent Course # BIOL 1054 when combined with BIOL 2161 General Zoology Lab**

3 credits: 3 hours lecture

Corequisite: ENGL 1013, BIOL 1063 or BIOL 2083 recommended

Animal kingdom: classification, phylogenetic relationships, morphology, function, and life histories of animals.

BIOL 2161 General Zoology Laboratory

**A.C.T.S. Equivalent Course # BIOL 1054 when combined with BIOL 2153 General Zoology**

1 credit: 3 hours laboratory

Corequisite: BIOL 2153

Study and dissection of representative animals, emphasizing morphology, phylogeny, and life histories.

BIOL 2171 General Botany Laboratory

**A.C.T.S. Equivalent Course # BIOL 1034 when combined with BIOL 2143 General Botany**

1 Credit: 3 hours laboratory

Corequisite: BIOL 2143

Morphological survey of plants, fungi, and plant-like protista, including the anatomy of seed plants.

BIOL 2233 Anatomy and Physiology I

**A.C.T.S. Equivalent Course # BIOL 2404 when combined with BIOL 2291 Anatomy and Physiology I Lab**

3 credits: 3 hours lecture

Co-requisites: ENGL 1013, BIOL 1063 recommended

A basic course in anatomy and physiology with emphasis on structure and function of cells, tissues, organs and systems in the human body.

BIOL 2243 Anatomy and Physiology II

**A.C.T.S. Equivalent Course # BIOL 2414 when combined with BIOL 2301 Anatomy and Physiology II Lab**

3 credits: 3 hours lecture

Prerequisite: BIOL 2233

A continuation of the basic course in anatomy and physiology with emphasis on structure and function of cells, tissues, organs and systems in the human body.

BIOL 2291 Anatomy and Physiology I Lab

**A.C.T.S. Equivalent Course # BIOL 2404 when combined with BIOL 2233 Anatomy and Physiology I**

1 credit: 3 hours lab

Co-requisites: BIOL 2233

Structure and function of cells, tissues, organs and systems in the human body.

BIOL 2301 Anatomy and Physiology II Lab

**A.C.T.S. Equivalent Course # BIOL 2414 when combined with BIOL 22443 Anatomy and Physiology II**

1 credit: 3 hours lab

Co-requisites BIOL 2243

Structure and function of cells, tissues, organs and systems in the human body.

BIOL 3324 Ornithology/Mammalogy

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisites: BIOL 2153 and BIOL 2161

Taxonomy and natural history of birds and mammals, emphasizing the local fauna. Offered: Spring, even-numbered years.

BIOL 3333 Molecular Biology

3 credits: 3 hours lecture

Prerequisites: BIOL 3553 or BIOL 3354

Study of genes and their activities at the molecular level with an emphasis on applications useful in the analysis of genomes and treatment of genetic diseases.

BIOL 3354 Genetics

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisites: BIOL 2083 and BIOL 2091; CHEM 1113 and CHEM 1131

Principal laws of heredity, including Mendelian, molecular, and cytogenetics. Offered: Fall.

BIOL 3363 Cell Biology

3 credits: 3 hours lecture

Prerequisites: BIOL 3354 and CHEM 1113

Introduction to the structure and physiology of cells with an emphasis on molecular biology. A core course for biology majors.

BIOL 3384 Herpetology

NOTE: Same as WLF 3384

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisites: BIOL 2153 and BIOL 2161

Taxonomy and natural history of amphibians, reptiles, crocodilians, and turtles, emphasizing local fauna. Offered: Spring, odd-numbered years.

BIOL 3394 Ichthyology

NOTE: Same as WLF 3394

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisites: BIOL 2153 and BIOL 2161

Taxonomy and biology of fishes, emphasizing local fauna. Offered: Fall, even-numbered years.

BIOL 3413 Mammalogy

3 credits: 3 hours lecture

Prerequisites: BIOL 2153 and BIOL 2161

Taxonomy, morphology, physiology, behavior, ecology and conservation of mammals; emphasizing mammals that occur in the central and southeastern United States. Offered: Fall, odd-numbered years.

BIOL 3423 Plant Morphology

3 credits: 1 hour lecture, 6 hours laboratory

Prerequisite: BIOL 2143 and BIOL 2171

Structure, reproduction, and life histories of the vascular plants: ferns and fern allies, gymnosperms, and flowering plants.

BIOL 3434 Regional Flora

4 credits: 2 hours lecture, 6 hours laboratory

Prerequisite: BIOL 2143 and BIOL 2171

Identification and classification of the vascular plants of the southeastern United States, emphasizing flowering plants. Offered: Spring, odd-numbered years.

BIOL 3451 Mammalogy Lab

1 credit: 3 hours Laboratory

Prerequisites: BIOL 2153 and BIOL 2161

Corequisite: BIOL/WLF 3413

Taxonomy and natural history of mammals, emphasizing Arkansas fauna. Offered: Fall, odd-numbered years.

BIOL 3484 General Ecology

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisites: BIOL 1143, 1153, 1161 and 1171 and six hours of chemistry

Principles of ecology; study of environments and their components, the flow of energy and materials, ecological succession, pollution, and radiation ecology. Offered: Fall.

BIOL 3493 Environmental Science

3 credits: 3 hours lecture

Prerequisite: 3 hours of biology or earth science

NOTE: Same as ESCI 3493

A survey of the environment to provide an understanding of and respect for the ecosystems upon which the human species is dependent. Offered: Fall, even-numbered years.

BIOL 3503 Marine Biology

3 credits: 3 hours lecture

Prerequisites: BIOL 2153 and BIOL 2161

Study of the structure and function of the marine environment with emphasis on the fauna and ecology of the Gulf of Mexico. Optional field trip to the Gulf of Mexico.

BIOL 3511 Marine Biology Laboratory

1 credit: 2 hours laboratory

Prerequisites: BIOL 2153 and BIOL 2161

Study of the structure and function of the marine environment with emphasis on the identification of some of the common organisms of the Gulf of Mexico. Optional field trip to the Gulf of Mexico.

BIOL 3524 Ornithology

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisites: BIOL 2153 and BIOL 2161

Taxonomy and natural history of birds, emphasizing the local fauna. Offered: Spring, even-numbered years.

### BIOL 3553 Microbiology

3 credits: 3 hours lecture

Prerequisites: six hours of chemistry & three hours of biology; or BIOL2243/2301 & three additional hours of BIOL

The biology of microorganisms including bacteria, viruses, fungi, and protozoans, with emphasis given to their importance in health and disease.

### BIOL 3561 Microbiology Lab

1 credit: 3 hours laboratory

Corequisite: BIOL 3553

A laboratory course designed to supplement the basic lecture course in microbiology with experimentation and demonstration.

### BIOL 3574 Comparative Anatomy

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisites: BIOL 2153 and BIOL 2161

Structure, development, function, and evolution of organs and organ systems in the different vertebrate groups with emphasis on basic principles. Offered: Fall.

### BIOL 358V Natural History

Variable credit

Prerequisite: 3 hours biology or 3 hours earth science

NOTE: May be taken for a maximum of 3 hours credit. Same as ESCI 358V, FOR 358V and WLF 358V.

A field course in earth science and biology of natural ecosystems, consisting of travel, study and/or research in unique natural areas of North America.

### BIOL 3594 Invertebrate Zoology

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisites: BIOL 2153 and BIOL 2161

Classification, phylogenetic relationships, morphology, function, and life histories of invertebrates, emphasizing marine invertebrates and the economic importance of all invertebrate groups.

### BIOL 3763 Evolution

3 credits: 3 hours lecture

Prerequisite: BIOL 2083

Study of evolutionary theory and processes, including selection, adaptation, and speciation. The course also explores classification of organisms and scientific nomenclature.

### BIOL 3801 Mammalian Anatomy Laboratory

1 credit: 3 hours laboratory

Prerequisites: BIOL 2153 and BIOL 2161

Basic mammalian anatomy, with emphasis on the human skeleton and cat organ systems.

### BIOL 4594 Waterfowl Ecology

4 credits: 3 hours lecture, 3 hours lab

Prerequisites: BIOL 3484

Study of the natural history and taxonomy of waterfowl. Also focuses on ecological and political challenges facing waterfowl conservation across North America. Offered spring in odd numbered years.

**BIOL 4624 Vertebrate Embryology**

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisites: BIOL 2153, 2161 and BIOL 3574

Embryonic development of the chordates as applied to amphioxus, frog, chick, and pig. Offered: Spring, even-numbered years.

**BIOL 4634 Vertebrate Physiology**

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisites: BIOL 3363 and eight hours of chemistry or instructor's permission

Fundamental concepts of vertebrate physiology, emphasizing function, mechanism, and controls of the various vertebrate organ systems. Offered: Spring.

**BIOL 4664 Mammalian Histology**

4 credits: 2 hours lecture, 6 hours laboratory

Prerequisites: BIOL 2153 and BIOL 2161

A morphological study and identification of mammalian tissues (human when available) and their organization within mammalian organs.

**BIOL 4673 Pharmacology**

3 credits: 3 hours lecture

Prerequisite: junior or senior standing and permission of both the instructor and the School Dean

Study of the response of living organisms to drugs.

**BIOL 469V Senior Research**

Variable credit

Prerequisites: 20 hours of biology, eight hours of chemistry, senior standing, and approval of a project proposal by the School Dean

NOTE: Open only to biology majors and minors. May be repeated for a maximum of 6 hours of credit.

Literature search and laboratory and/or field work on individual research projects.

**BIOL 4724 Aquatic Biology**

4 credits: 3 hours lecture and 3 hours of laboratory

Prerequisites: BIOL 2153, BIOL 2161, and six hours of chemistry

Chemical and biological studies of aquatic environments with emphasis on the geological and hydrological features of lakes and streams.

**BIOL 4734 Animal Behavior**

4 credits: 3 hours lecture, 3 hours laboratory

Prerequisite: BIOL 1063

Behavior of animals, focusing on evolutionary patterns and ecological significance. Topics include genetics of behavior, ethology, adaptation, fitness, reproductive tactics/mating systems, foraging, and social behavior.

**BIOL 4741 Biology Seminar**

1 credit: 1 hour lecture

Prerequisites: 20 hours of biology

A research course covering methods for writing papers and conducting public presentations on topics from the biological sciences. Offered: Fall.

**BIOL 4753 Selected Topics in Biology**

3 credits: 3 hours lecture

Prerequisites: junior or senior standing and permission of both the instructor and the School Dean

Selected topics in biology.

BIOL 479V Independent Study in Biology

Variable credit

Consult the Independent Study Courses subheading in the Academic Regulations section of this catalog for prerequisites and description.