

### **Courses that *Do Not* count towards the Biology Major but may be used for the Biology Minor**

The following BIOL courses may not be used as credit towards the completion of the Biology Major. Please note that none of these courses are listed as options under any Concentration within the Biology Major. They may be used for credit toward the Biology Minor.

#### **BIOL 215 ESSENTIALS OF MICROBIOLOGY (4)**

Pathogenesis of bacteria and viruses, their interactions with the human body, and methods of treatment and prevention. Three hours of laboratory per week. Recommended for Health Science majors. Not for Biology major credit. Prerequisites: BIOL 191/BIOL 191L or BIOL 192/BIOL 192L or BIOL 200/BIOL 200L [BIOL 190 or BIOL 201] and CHEM 121/CHEM 121L or CHEM 131/CHEM 131L [CHEM 110] or CHEM 115 [CHEM 105]. Lab/Class fee will be assessed.

#### **BIOL 221 HUMAN ANATOMY & PHYSIOLOGY I [LECTURE] (3)**

Cell biology, histology skeletal, muscular, and nervous systems. Course enrollment is limited to two attempts including audits and withdrawals. Exceptions to this limit may be requested by contacting the Course Coordinator. Corequisite: BIOL 221L (lab). Prerequisite: BIOL 191/ BIOL 191L (BIOL 190) or BIOL 200/ BIOL 200L (BIOL 201). **NOTE:** For students in the 2021-2022 catalog forward.

#### **BIOL 221L HUMAN ANATOMY & PHYSIOLOGY I [LAB] (1)**

Cell biology, histology skeletal, muscular, and nervous systems. Average of three laboratory hours per week. Course enrollment is limited to two attempts including audits and withdrawals. Exceptions to this limit may be requested by contacting the Course Coordinator. Corequisite: BIOL 221 (lecture). Prerequisites: BIOL 191/ BIOL 191L (BIOL 190), BIOL 192, or BIOL 200/ BIOL 200L (BIOL 201). Lab/class fee will be assessed. **NOTE:** For students in the 2021-2022 catalog forward.

#### **BIOL 306 HUMAN ECOLOGY AND SUSTAINABILITY (3)**

Relationships and sustainability of human society and natural ecosystems. Relevant scientific, socioeconomic and ethical issues will be examined in such current events as climate change, energy policy and urban planning. Cannot be taken for Biology major credit. Prerequisites: BIOL 105, BIOL 115, BIOL 191/ BIOL 191L (BIOL 190), BIOL 200/ BIOL 200L (BIOL 201), BIOL 206/206L (BIOL 202) or CHEM 104. Core: Ethical Issues & Perspectives.

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### **Courses that *Do Not* count towards the Biology Major or Minor**

The following BIOL courses may not be used as credit towards the completion of the Biology Major or Minor. Please note that none of these courses are listed as options under any Concentration within the Biology Major or the list of courses that may be used to fulfill the Biology Minor.

#### **BIOL 100 HUMANISTIC BOTANY (3)**

Selected botanical topics of interest to the non-science major. Topics will include poisonous plants, medicinal plants, plant hallucinogens, tree-ring dating, botanical genetics, bonsai and commercial uses of major plant groups. Not for biology major credit. No credit will be given to those who have successfully completed BIOL 205.

#### **BIOL 103 HUMAN BIOLOGY (3)**

Basic principles of human body processes in normal and certain abnormal conditions for non-science majors. The emphasis will be on physiology with sufficient anatomy for its understanding. Not for biology major credit. Not open to those who successfully completed BIOL 221/ BIOL 221L (BIOL 213), BIOL 222/ BIOL 222L (BIOL 214) , or BIOL 325.

#### **BIOL 105 ENVIRONMENTAL BIOL (3)**

Introduction of the relationships between humans and the environment. Fundamentals of ecology, hydrology, demography, energy, and nutrient cycling will be covered, as well as the human impact on the use of the Earth's land, water and air resources. An emphasis is placed on five key themes: Human Population; Sustainability; Global Perspective; Urban World; and Values and Knowledge. Core: Biological & Physical Sciences.

#### **BIOL 117 HONORS BIOLOGY: THE SCIENCE OF LIFE (4)**

A broad-based, investigative course designed to introduce important issues in the biological sciences to the non-scientist. Major topics include human genetics, evolution, ecology, and environmental issues. Three hours of lecture and two hours of laboratory per week. Not for students intending to pursue additional coursework in Biology nor for students from the College of Health Professions who require BIOL 221/ BIOL 221L & BIOL 222/ BIOL 222L and/or BIOL 315. Not for credit toward Biology major or minor. Not open to those who successfully completed BIOL 115, BIOL 120/ BIOL 120L, BIOL 201 or BIOL 200/ BIOL 200L. Prerequisite: Admission to the Honors College. Core: Biological & Physical Sciences. Lab/Class fee will be assessed.

#### **BIOL 120 PRINCIPLES OF BIOLOGY [LECTURE] (3)**

Biological principles common to plants and animals. Topics include scientific investigation, genetics, evolution, ecology and ethical issues in contemporary biology. Not for credit toward Biology major or minor. Not open to those who have successfully completed BIOL 115, BIOL 201 or BIOL 200/ BIOL 200L. Corequisite: BIOL 120L. Core: Biological and Physical Sciences

#### **BIOL 120L PRINCIPLES OF BIOLOGY [LAB] (1)**

Biological principles common to plants and animals. Topics include scientific investigation, genetics, evolution and ecology. Not for credit toward Biology major or minor. Not open to those who have successfully completed BIOL 110, 115, 201 or BIOL 200/ BIOL 200L. Corequisite: BIOL 120 (lecture). Successful completion of both satisfies Core: Lab and Non-Lab Sciences. Lab/Class fee will be assessed.

**BIOL 191 INTRODUCTORY BIOLOGY FOR HEALTH PROFESSIONS [LECTURE] (3)**

Basic principles of biology including process of scientific investigation, cells, macromolecules, metabolism, DNA, genetics, evolution, and ecology. Intended for College of Health Professions majors who will take additional biology courses. Not for Biology major/minor credit. Not open to those who successfully completed BIOL 201, BIOL 200 or BIOL 200L. Core credit not given for both BIOL 191/ BIOL 191L and BIOL 120/ BIOL 120L. College of Health Professions major credit given to those who complete either BIOL 190 or BIOL 191 and BIOL 191L.

Corequisite: BIOL 191L. Prerequisite: CHP major. Core: Lab & Non-Lab Sciences

**BIOL 191L INTRODUCTORY BIOLOGY FOR HEALTH PROFESSIONS [LAB] (1)**

Basic principles of biology including process of scientific investigation, cells, macromolecules, metabolism, DNA, genetics, evolution, and ecology. Average of three laboratory hours per week. Intended for College of Health Professions majors who will take additional biology courses. Not for Biology major/minor credit. Not open to those who successfully completed BIOL 200/ BIOL 200L or BIOL 201. Core credit not given for both BIOL 191/ BIOL 191L and BIOL 120/ BIOL 120L. College of Health Professions major credit given to those who complete either BIOL 190 or BIOL 191/ BIOL 191L.

Corequisite: BIOL 191. Prerequisite: CHP major. Core: Biological & Physical Sciences. Lab/Class fee will be assessed.

**BIOL 192 HONORS INTRODUCTORY BIOLOGY FOR THE HEALTH PROFESSIONS (4)**

Basic principles of biology including process of scientific investigation, cells, macromolecules, metabolism, DNA, genetics, evolution, and ecology. Intended for College of Health Professions majors who will take additional biology courses. Not for Biology major/minor credit. Not open to those who successfully completed BIOL 201 or BIOL 200/ BIOL 200L. Core: Biological & Physical Sciences. Honors College course. Lab/Class fee will be assessed.

**BIOL 210 MEDICAL TERMINOLOGY (3)**

An interactive online study of the language of medicine including word parts, compound word construction, and medical terms used to describe the major body systems as used in medical records, documents, and discussions among medical professionals. Intended for students planning to apply to graduate school in some area of biomedicine, e.g. physician assistant school; medical, dental, or veterinary school; or a graduate program in a biomedical research field. At the completion of this course, students are expected to correctly use medical terms in both written and oral communication. Prerequisite: BIOL 191/ BIOL 191L (BIOL 190) or BIOL 200/ BIOL 200L (BIOL 201).

**BIOL 222 HUMAN ANATOMY & PHYSIOLOGY II [LECTURE] (3)**

Cardiovascular, respiratory, digestive, excretory, endocrine and reproductive systems. Course enrollment is limited to two attempts including audits and withdrawals. Exceptions to this limit may be requested by contacting the Course Coordinator. Corequisite: BIOL 222L (lab).

Prerequisite: BIOL 221/ BIOL 221L. **NOTE:** For students in the 2021-2022 catalog forward.

**BIOL 222L HUMAN ANATOMY & PHYSIOLOGY II [LAB] (1)**

Cardiovascular, respiratory, digestive, excretory, endocrine and reproductive systems. Average of three laboratory hours per week. Course enrollment is limited to two attempts including audits and withdrawals. Exceptions to this limit may be requested by contacting the Course Coordinator. Corequisite: BIOL 222 (lecture). Prerequisite: BIOL 221 / BIOL 221L. Lab/Class fee will be assessed.

**NOTE:** For students in the 2021-2022 catalog forward.

**BIOL 301 FIELD AND NATURAL SCIENCE (3)**

Physical and biological components of various environments and their interrelationships with each other and humans. Emphasis on field studies observation with the application of findings to classroom teaching and learning in the elementary and middle school classroom. Intended for Middle School education majors and environmental science and studies majors in the informal environmental education track only. Not for credit towards BIOL major or minor. Prerequisites: BIOL 117, or BIOL 120/BIOL 120L (BIOL 115), or BIOL 191/BIOL 191L (BIOL 190), or BIOL 192, or BIOL 200/BIOL 200L (BIOL 201), or BIOL 206/BIOL 206L (BIOL 202), or BIOL 203; major status. Lab/Class fee will be assessed.

**BIOL 303 LIFE SCIENCES (3)**

Living organisms in the environment, emphasizing modes of scientific inquiry and the utilization of living organisms in the classroom. Not for credit toward the Biology major or minor. Prerequisites: BIOL 120/ BIOL 120L (BIOL 115), BIOL 191/ BIOL 191L (BIOL 190) or BIOL 200/ BIOL 200L (BIOL 201); majors in ELED, EESE, ECSE. Lab/Class fee will be assessed.

**BIOL 322 BIOTECH & SOCIETY (3)**

Use of biotechnology in medicine, agriculture, and ecology; applications, ethics and future implications. Not for credit toward Biology major, minor, or M.S. degree in Biology. Prerequisite: BIOL 191/ BIOL 191L (BIOL 190) or BIOL 200/ BIOL 200L (BIOL 201).

**BIOL 323 GENES, EVOLUTION, AND MORALITY (3)**

Biological basis of morality and how those principles can be applied for a better understanding of historical events, current issues facing society, and future perspectives. Prerequisite: BIOL 191/ BIOL 191L (BIOL 190) or BIOL 200/ BIOL 200L (BIOL 201).

**BIOL 327 DANGEROUS DISEASES (3)**

Microorganisms and their roles in diseases. Human impact on the environment relating to emerging disease; biotechnological techniques; ethical issues. Not for credit toward Biology major, minor, or MS in Biology. Prerequisites: BIOL 110, 112, 115, 190 or BIOL 201.

**BIOL 381 WRITING IN THE BIOLOGICAL SCIENCES (3)**

Practicum on writing in the scientific style appropriate for biology. Includes detailed analysis and critical written summation of primary research literature in biology. Not for major or minor credit or M.S. degree in Biology. Requires grade of C or better to fulfill Core requirement. Prerequisites: 60 completed units including a minimum of 16 units completed in biology, or permission of the instructor. Core: Advanced Writing Seminar

**BIOL 382 ENVIRONMENTAL EDUCATION AND SERVICE LEARNING IN THE TROPICS (3)**

Designed for majors in Science or Education with an interest in Environmental Education; course work will take place in Costa Rica; emphasis on tropical forest ecology concepts applicable to PreK-12 environmental education and management of tropical natural resources. Cross-listed as ENVS 382. Prerequisites: minimum Junior status and consent of the instructor.

**BIOL 425 DISSECTION OF THE UPPER EXTREMITY (2)**

Gross anatomical dissection of the human upper extremity including the muscles, nerves and blood vessels which supply the appendage. Special emphasis will be placed on development of techniques which assure careful and accurate dissection. Offered only in minimester.

Prerequisites: BIOL 221/ BIOL 221L (BIOL 213) and consent of instructor. Lab/Class fee will be assessed.

**BIOL 481 DIRECTED READINGS IN BIOLOGY (1-3)**

Independent reading in an area selected by the student in consultation with the instructor. May not be applied toward the Biology major or Biology minor, or M.S. degree in biology. May be repeated for a maximum of 3 credits. Prerequisite: a minimum of 10 credits in biology and prior written consent of instructor.

**BIOL 490 INDEPENDENT RESEARCH (1-3)**

Active student participation in original investigation / research project with a faculty mentor. Not for Major or Minor credit. May be repeated for a maximum of 9 units. Prerequisite: Consent of the instructor. Graded S/U.

**BIOL 493 INTERNSHIP IN BIOLOGY (3)**

Practical application of biology in businesses, industries, and public and private agencies. Not for major or minor credit. May be repeated once for credit to a maximum of 6 units. Prerequisites: 2.75 GPA, junior or senior standing, major in Biology, and consent of the biology internship coordinator. A minimum of 11 units in Biology completed at Towson University is recommended. Special permit and co-op fee required. Graded S/U.

**BIOL 494 TRAVEL STUDY (1-3)**

A detailed investigation of field-oriented problems in biology away from the Towson University campus. Locations and topics to be selected by the department and instructors sponsoring the program. May be repeated for a maximum of 3 units.

Prerequisites: BIOL 117, BIOL 120/ BIOL 120L, BIOL 191/ BIOL 191L (BIOL 190), BIOL 200/ BIOL 200L (BIOL 201) or equivalent and consent of instructor.

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