BIOLOGICAL SCIENCES (BSC)

- General Education Course

BSC 104 Introduction to Biology **3 Credit hours**
Fundamentals of biology with emphasis on the unity of life, energetics, genetics and the world of living things. Intended for non-science majors.
Co-req: BSC 104L
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 104L Introduction to Biology Lab **1 Credit hour**
Laboratory companion course to BSC 104. Introduction of the scientific method, with focus on a survey of the fundamental principles of the biological sciences as they apply to life on earth.
Pre-req: BSC 104 (may be taken concurrently) with a minimum grade of C.
Concurrent PR: BSC 104
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 105 Human Biology **3 Credit hours**
Fundamentals of biological human structure, function, and interactions with the environment. Intended for non-science majors. Does not count for health professions credit.
Co-req: BSC 105L
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 105L Human Biology Lab **1 Credit hour**
Laboratory companion course to BSC 105. Investigations of human structure, function, and interactions with the environment. Intended for non-science majors; does not count for health professions credit.
Co-req: BSC 105
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 120 Principles of Biology I **3 Credit hours**
Study of core biological principles common to all organisms. Intended for science majors and pre-professional students.
Pre-req: (ACT Math with a score of 21 or SAT Mathematics Before Mar. 16 with a score of 500 or SAT MATH SECTION SCORE with a score of 530 or MTH 121 with a minimum grade of C or MTH 121B with a minimum grade of C or MTH 121H with a minimum grade of C or MTH 123 with a minimum grade of C or MTH 127 with a minimum grade of C or MTH 130 with a minimum grade of C or MTH 132 with a minimum grade of C) or (BSC 104 with a minimum grade of C and BSC 104L with a minimum grade of C) or (BSC 105 with a minimum grade of C and BSC 105L with a minimum grade of C).
Co-req: BSC 120L
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 120H Principles of Biology I Honors **3 Credit hours**
Study of basic biological principles common to all organisms. Intended for science majors and pre-professional students.
Pre-req: Admitted Honors College with a score of 1 and (ACT Math with a score of 21 or SAT Mathematics Before Mar. 16 with a score of 500 or SAT MATH SECTION SCORE with a score of 530) and (BSC 120L (may be taken concurrently) with a minimum grade of C or BSC 120LH (may be taken concurrently) with a minimum grade of C) or (BSC 104 with a minimum grade of C and BSC 104L with a minimum grade of C) or (BSC 105 with a minimum grade of C and BSC 105L with a minimum grade of C).
Concurrent PR: BSC 120L or BSC 120LH
Attributes: Honors, Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 120L Principles of Biology I Lab **1 Credit hour**
Laboratory companion course to BSC 120. Practical exercises focuses on investigation of core biological principles common to all organisms.
Pre-req: BSC 120 (may be taken concurrently) with a minimum grade of C.
Concurrent PR: BSC 120
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 120LH Prin of Biology I Lab Honors **1 Credit hour**
Laboratory companion course to BSC 120. Practical exercises focused on investigation of core biological principles common to all organisms.
Pre-req: Admitted Honors College with a score of 1 and (ACT Math with a score of 21 or SAT Mathematics Before Mar. 16 with a score of 500 or SAT MATH SECTION SCORE with a score of 530) or (BSC 104 with a minimum grade of C and BSC 104L with a minimum grade of C) or (BSC 105 with a minimum grade of C and BSC 105L with a minimum grade of C).
Co-req: BSC 120H
Attributes: Honors, Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 121 Principles of Biology II **3 Credit hours**
A continuation of the study of core biological principles common to all organisms. Intended for science majors and pre-professional students.
Pre-req: BSC 120 with a minimum grade of C or BSC 120H with a minimum grade of C.
Co-req: BSC 121L
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 121L Prin of Biology II Lab **1 Credit hour**
Laboratory companion course to BSC 121. Continuation of practical exercises focused on investigation of core biological principles common to all organisms.
Pre-req: BSC 121 (may be taken concurrently) with a minimum grade of C.
Concurrent PR: BSC 121
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 227 Human Anatomy **3 Credit hours**
Study of gross and microscopic anatomy of human body systems and their development. Provides preparation for degrees in health professions. Does not count towards a major in Biological Science.
Co-req: BSC 227L
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 227L Human Anatomy Lab **1 Credit hour**
Laboratory companion course to BSC 227. Practical and computer aided exercises related to gross and microscopic anatomy of human body systems and their development. Does not count toward a major in Biological Sciences.
Co-req: BSC 227
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 228 Human Physiology **3 Credit hours**
Study of normal human physiology, from cells to systems. Provides the scientific background for understanding pathophysiology and preparation for degrees in health professions. Does not count toward a major in Biological Sciences.
Pre-req: BSC 227 with a minimum grade of C and BSC 227L with a minimum grade of C.
Co-req: BSC 228L
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 228L Human Physiology Lab **1 Credit hour**
Laboratory companion course to BSC 228. Introduction of the scientific method, with focus on interpretation of data and application toward physiological systems. Does not count toward a major in Biological Sciences.
Pre-req: BSC 227 with a minimum grade of C and BSC 227L with a minimum grade of C.
Co-req: BSC 228
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 250 Microbiol & Human Disease **3 Credit hours**
Introduction to microbiology with emphasis on the role of microorganisms in the disease process. Does not count towards a major in Biological Sciences.
Pre-req: BSC 227 with a minimum grade of C and BSC 227L with a minimum grade of C.
Co-req: BSC 250L
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 250L Microbio and Human Disease Lab **1 Credit hour**
Laboratory companion course to BSC 250. Practical exercises with emphasis on microscopy, microorganism identification, and aseptic technique. Does not count towards a major in Biological Sciences.
Pre-req: BSC 227 with a minimum grade of C and BSC 227L with a minimum grade of C.
Co-req: BSC 250
Attributes: Natural Sciences, Core II Natural Sciences
Grade Mode: Normal Grading Mode

BSC 280 Special Topics **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 281 Special Topics **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 282 Special Topics **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 283 Special Topics **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 301 Vertebrate Embryology **4 Credit hours**
Vertebrate development based chiefly on frog, chick and pig embryos. 2 lec-4 lab.
Pre-req: BSC 121 with a minimum grade of C and BSC 121L with a minimum grade of C.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 302 Principles of Microbiology **3 Credit hours**
Basic microbiological techniques, fundamental principles of microbial action, physiological processes, immunology, serology, disease process. This course is lecture only (the associated lab for this course is listed under a different course number)
Pre-req: (BSC 121 with a minimum grade of C or BSC 121H with a minimum grade of C) and BSC 121L with a minimum grade of C.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 304 Microbiology Lab **2 Credit hours**
A laboratory course emphasizing basic microbiological techniques including preparation of culture media, gram staining, isolation and identification of bacteria from diverse environments, and evaluation of antiseptics and disinfectants.
Pre-req: (BSC 121 with a minimum grade of C or BSC 121H with a minimum grade of C) and BSC 121L with a minimum grade of C.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 312 Invertebrate Zoology **4 Credit hours**
Survey of invertebrate phyla from protists through non-vertebrate chordates. Emphasis is placed upon identification of taxa, development, microanatomy, life histories and evolutionary relationship.
Pre-req: BSC 121 with a minimum grade of C and BSC 121L with a minimum grade of C.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 320 Principles of Ecology **4 Credit hours**
A fundamental approach to the basic principles underlying the interrelationships of organisms with their biotic and abiotic environments. A variety of aquatic and terrestrial ecosystems will be studied in the field and in the laboratory. 3 lec-3 lab.
Pre-req: (BSC 121 with a minimum grade of C or BSC 121H with a minimum grade of C) and BSC 121L with a minimum grade of C.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 322 Principles Cell Biology **4 Credit hours**
A fundamental approach to the principles of cell biology covering general cellular structure and function,organelles, intercellular interactions, molecular interactions, and modern cellular and molecular methods. 3 lec-3 lab.
Pre-req: (BSC 121 with a minimum grade of C or BSC 121H with a minimum grade of C) and BSC 121L with a minimum grade of C.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 324 Principles of Genetics **4 Credit hours**
The fundamental principles and mechanisms of inheritance. 3 lec-3 lab.
Pre-req: (BSC 121 with a minimum grade of C or BSC 121H with a minimum grade of C) and BSC 121L with a minimum grade of C.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 332 Principles of Human Anatomy **3 Credit hours**
An overview of the major anatomical regions and functional systems, with a focus on human anatomy in a comparative and evolutionary context.
Pre-req: (BSC 121 with a minimum grade of C or BSC 121H with a minimum grade of C) and BSC 121L with a minimum grade of C and BSC 332L (may be taken concurrently) with a minimum grade of C.
Concurrent PR: BSC 332L
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 332L Prin of Human Anatomy Lab **1 Credit hour**
Laboratory companion course to BSC 332. Practical investigation of human anatomy in a comparative and evolutionary context.
Pre-req: BSC 332 (may be taken concurrently) with a minimum grade of C and (BSC 121 with a minimum grade of C or BSC 121H with a minimum grade of C) and BSC 121L with a minimum grade of C.
Concurrent PR: BSC 332
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 334 Principles of Human Physiology **3 Credit hours**
An overview of the major physiological systems, with focus on comparative, molecular, and pathophysiology.
Pre-req: (BSC 121 with a minimum grade of C or BSC 121H with a minimum grade of C) and BSC 121L with a minimum grade of C and BSC 334L (may be taken concurrently) with a minimum grade of C.
Concurrent PR: BSC 334L
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 334L Prin of Human Physiology Lab **1 Credit hour**
Laboratory companion course to BSC 334. Investigation of key physiological systems with focus on data acquisition and analysis.
Pre-req: BSC 334 (may be taken concurrently) with a minimum grade of C and (BSC 121 with a minimum grade of C or BSC 121H with a minimum grade of C) and BSC 121L with a minimum grade of C.
Concurrent PR: BSC 334
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 340 Principles of Evolution **3 Credit hours**
An overview of the unity and diversity of life, and the mechanisms and processes of evolutionary change at the population, organismal, and molecular levels.
Pre-req: (BSC 121 with a minimum grade of C or BSC 121H with a minimum grade of C) and BSC 121L with a minimum grade of C.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 401 Ichthyology **4 Credit hours**
Anatomy, physiology, ecology, zoogeography, economic importance and classification of major groups and representative local species of fishes. 2 lec-2 lab and field.
Pre-req: (BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D) or (BSC 121 with a minimum grade of C and BSC 121L with a minimum grade of C and NRE 322 with a minimum grade of D) or (BSC 121 with a minimum grade of C and BSC 121L with a minimum grade of C and NRE 323 with a minimum grade of D).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 404 Cellular Physiology **3 Credit hours**
In depth analysis of the physiological and molecular processes that underlie the functions of cells, using examples from diverse taxa. Focus on biomedical and biotechnical implications.
Pre-req: BSC 302 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 334 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 408 Ornithology **4 Credit hours**
An introduction to avian biology: identification, distribution, migration, and breeding activities of birds.2 lec-4 lab.
Pre-req: (BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D) or (BSC 121 with a minimum grade of C and (NRE 322 with a minimum grade of D or NRE 323 with a minimum grade of D) and BSC 121L with a minimum grade of D).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 409 Mammalogy **4 Credit hours**
A study of the structural features, evolution and classification of mammals; other topics will include ecology, zoogeography, behavior, reproductive strategies, physiological adaptation to extreme environments and economic aspects.3 lec-3 lab and field.
Pre-req: (BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D) or (BSC 121 with a minimum grade of C and (NRE 322 with a minimum grade of D or NRE 323 with a minimum grade of D) and BSC 121L with a minimum grade of C).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 410 Remote Sensing/GIS Appl **4 Credit hours**
A study of the physical systems for collecting remotely sensed data. Statistical/spatial analysis and modeling using image processing/geographic information/spatial computer software systems with earth resources applications.
Pre-req: PHY 201 with a minimum grade of D or BSC 320 with a minimum grade of D or BSC 340 with a minimum grade of D or NRE 423 with a minimum grade of D or NRE 433 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 411 Dgtl Image Proc/GIS Model **4 Credit hours**
A study of image processing/geographic information/spatial analysis systems, concurrent and parallel image processing 3-D modeling scenarios utilizing geophysical data for computer simulation modeling.
Pre-req: PHY 201 with a minimum grade of D or BSC 320 with a minimum grade of D or BSC 340 with a minimum grade of D or NRE 423 with a minimum grade of D or NRE 433 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 413 Prin of Organic Evolution **3 Credit hours**
Facts and possible mechanisms underlying the unity and diversity of life with emphasis on Neo-Darwinian concepts of the role of species in evolutionary phenomena.
Pre-req: BSC 302 or BSC 320 or BSC 322 or BSC 324.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 416 Plant Taxonomy **4 Credit hours**
Recognition of our native seed plants and ferns. 2 lec-4 lab.
Pre-req: BSC 302 with a minimum grade of D or BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 340 with a minimum grade of D or NRE 322 with a minimum grade of D or NRE 401 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 417 Biostatistics **3 Credit hours**
Statistical skills for biological/biomedical research, with emphasis on applications. Experimental design/survey sampling, estimation/hypothesis testing procedures,regression, ANOVA, multiple comparisons. Implementation using statistical software such as SAS, BMDP.
Pre-req: BSC 302 with a minimum grade of D or BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D or BSC 334 with a minimum grade of D or BSC 340 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 420 Plant Physiology **4 Credit hours**
Experimental study of plant life processes to include applicable biophysical and biochemical principles. 2 lec-4 lab.
Pre-req: BSC 302 with a minimum grade of D or BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 334 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 421 Phycology **4 Credit hours**
Morphology, taxonomy, and techniques used in the study of fresh-water algae with emphasis upon applications of ecological principles to current water quality problems. 2 lec-4 lab.
Pre-req: (BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D) or (BSC 121 with a minimum grade of C and (NRE 322 with a minimum grade of D or NRE 323 with a minimum grade of D) and BSC 121L with a minimum grade of C).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 422 Animal Physiology **3 Credit hours**
A comparative study of physiological principles in animal cells, organs, and systems. Focus on animal's reactions to their environment, and how comparative physiology applies to natural ecosystems and human health.
Pre-req: BSC 322 with a minimum grade of D and CHM 355 with a minimum grade of D and (MTH 140 with a minimum grade of D or MTH 140H with a minimum grade of D or MTH 132 with a minimum grade of D or MTH 229 with a minimum grade of D or MTH 229H with a minimum grade of D).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 423 Comp Vertebrate Anatomy **4 Credit hours**
Structure, function and relationships of systems of selected vertebrates with an emphasis on embryology and evolution. 2 lec.-4 lab.
Pre-req: BSC 302 with a minimum grade of D or BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D or BSC 334 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 424 Animal Parasitology **4 Credit hours**
Morphology, life histories, classification, and host relationships of common parasites. 2 lec-4 lab.
Pre-req: BSC 302 with a minimum grade of D or BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D or BSC 334 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 425 Systematics **3 Credit hours**
Biosystematics is a unifying discipline that combines taxonomy (collecting, describing and naming organisms), phylogenetics (evolutionary relationships among species), and classification (organization of taxa into groups which ultimately reflect evolutionary relationship).
Pre-req: (BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D) or (BSC 121 with a minimum grade of C and (NRE 322 with a minimum grade of D or NRE 323 with a minimum grade of D) and BSC 121L with a minimum grade of C).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 426 Medical Entomology **4 Credit hours**
Role of certain insects and other arthropods in the transmission of disease organisms and methods of control.2 lec-4 lab.
Pre-req: (BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D) or (BSC 121 with a minimum grade of C and (NRE 322 with a minimum grade of D or NRE 323 with a minimum grade of D) and BSC 121L with a minimum grade of C).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 428 Neuroscience **3 Credit hours**
The fundamentals of cellular and systems neuroscience, with application towards understanding current research and biomedical problems.
Pre-req: BSC 322 with a minimum grade of D or BSC 334 with a minimum grade of D or BSC 422 with a minimum grade of D or (BSC 121 with a minimum grade of D and CHM 355 with a minimum grade of D).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 429 Metabolic Systems **3 Credit hours**
Discussion of metabolic processes responsible for the activity of all living systems, factors that impact metabolic processes such as toxicology and pathology, and applications of metabolic pathways to biotechnology.
Pre-req: BSC 322 with a minimum grade of D or BSC 334 with a minimum grade of D or BSC 422 with a minimum grade of D or (BSC 121 with a minimum grade of D and CHM 355 with a minimum grade of D).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 430 Plant Ecology **4 Credit hours**
The study of plants and their interactions with their environment at different levels of ecological organization: individuals, populations, communities, and ecosystems. Emphasis on quantitative analysis of ecological data.
Pre-req: BSC 320 with a minimum grade of D or (BSC 121 with a minimum grade of D and BSC 121L with a minimum grade of D and NRE 322 with a minimum grade of C).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 431 Limnology **4 Credit hours**
Study of inland waters; ecological factors affecting lake and stream productivity and various aquatic communities.
Pre-req: BSC 320 with a minimum grade of D or (BSC 121 with a minimum grade of D and (NRE 323 with a minimum grade of D or NRE 431 with a minimum grade of D or NRE 435 with a minimum grade of D) and BSC 121L with a minimum grade of D).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 438 Emerging Infectious Diseases **3 Credit hours**
Introduces students to infectious diseases that are either newly emergent or have returned to prominence within the last decade.
Pre-req: BSC 302 with a minimum grade of D or BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D or BSC 334 with a minimum grade of D or BSC 340 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 443 Microbial Genetics **3 Credit hours**
Microbial Genetics covers the essential functions of DNA replication and gene expression in prokaryotic cells. The course includes molecular genetics of bacteria and phages, bioinformatics and discussion of laboratory techniques.
Pre-req: BSC 302 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 334 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 445 Microbial Ecology **3 Credit hours**
This course introduces students to the vital roles that microbes play in sustaining life on earth. Includes both theoretical and practical concepts ranging from the origin of life to biodegradation.
Pre-req: BSC 302 with a minimum grade of D or BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 340 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 448 Introductory Immunology **3 Credit hours**
Comprehensive study of the molecules, cells and processes of the immune system. Also covered are diseases with an immunologic basis and technological applications of immunological principles. Pre: C or better in BSC 121, CHM 212
Pre-req: BSC 302 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 334 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 450 Molecular Biology **3 Credit hours**
Advanced principles in molecular function emphasizing current research using recombinant DNA methodology.
Pre-req: BSC 302 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 334 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 451 Molecular Medicine **3 Credit hours**
Discussion of applications of molecular biology to modern medicine, including diagnostics, treatments, and development of new strategies and interventions.
Pre-req: BSC 302 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 334 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 454 Princ Adv Techn Mol Biol **3 Credit hours**
Students will gain an understanding of modern molecular biology through standard and novel methods and understand and criticize the published literature.
Pre-req: BSC 322 or BSC 324 or BSC 365 or BSC 450.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 456 Genes and Development **3 Credit hours**
Focuses on mechanisms of complex organismal development including cell specification, morphogenesis, and induction. Genetic manipulations of the model organism Drosophilia will illustrate current information.
Pre-req: BSC 302 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 334 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 458 Bioinformatics **3 Credit hours**
Discussion of modern computational approaches that help us use and understand massive databases of biological information including DNA, RNA, and protein sequence data. Students will use computational tools to extract information and meaning from real databases.
Pre-req: BSC 302 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 344 with a minimum grade of D.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 460 Conservation Biology **3 Credit hours**
This course focuses on the North American model of wildlife conservation (and its history), principles of biological diversity, threats to habitats and species of concern, and conservation policy.
Pre-req: BSC 320 with a minimum grade of D or (BSC 121 with a minimum grade of C and (NRE 220 with a minimum grade of D or NRE 320 with a minimum grade of D or NRE 322 with a minimum grade of D) and BSC 121L with a minimum grade of C).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 463 Bioethics **3 Credit hours**
Discussion of ethical issues in scientific research: fraud, informed consent, genetic testing, gene therapy, cloning, new drugs, vaccines and foods produced via engineered organisms. Includes analysis of case studies and communications practices.
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 465 Biology of Reptiles **4 Credit hours**
A survey of the reptiles of the world with special emphasis placed on forms resident to West Virginia, including aspects of ecology, physiology, zoogeography, anatomy, taxonomy, and behavior.
Pre-req: BSC 320 with a minimum grade of D or BSC 322 with a minimum grade of D or BSC 324 with a minimum grade of D or BSC 332 with a minimum grade of D or (BSC 121 with a minimum grade of C and (NRE 322 with a minimum grade of C or NRE 323 with a minimum grade of C) and BSC 121L with a minimum grade of C).
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 466 Biology of Amphibians **4 Credit hours**
A survey of the reptiles of the world with special emphasis placed on forms resident to West Virginia, including aspects of ecology, physiology, zoogeography, anatomy, taxonomy, and behavior.
Pre-req: BSC 121 with a minimum grade of C.
Grade Mode: Normal Grading Mode

BSC 480 Special Topics **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 481 Special Topics **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 482 Special Topics **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 483 Special Topics **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Normal Grading Mode

BSC 485 Independent Study **1-4 Credit hours**
Attributes: No Textbook Required, Natural Sciences
Grade Mode: Credit/No Credit Grade Only

BSC 486 Independent Study **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Credit/No Credit Grade Only

BSC 487 Independent Study **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Credit/No Credit Grade Only

BSC 488 Independent Study **1-4 Credit hours**
Attributes: Natural Sciences
Grade Mode: Credit/No Credit Grade Only

BSC 491 Capstone Experience **2 Credit hours**
A student-driving research or career shadowing experience under a qualified mentor. Must be approved by the Department of Biological Sciences prior to registration.
Attributes: Capstone Course, No Textbook Required, Natural Sciences
Grade Mode: Normal Grading Mode