

BIOL - BIOLOGY (BIOL)

BIOL U101 Introductory Biology I 4 Credit Hours

Fundamental principles of biology, including the scientific method, biochemistry, cellular respiration, photosynthesis, genetics, and cellular and molecular biology. Designed for science majors. Three class and three laboratory hours per week.

Prerequisite(s): Completion of MATH U121 or higher; or placement into at least MATH U126.

Corequisite(s): BIOL U101L.

BIOL U101L Introductory Biology I Lab 0 Credit Hours

Fundamental principles of biology, including the scientific method, biochemistry, cellular respiration, photosynthesis, genetics, and cellular and molecular biology. Designed for science majors. Three class and three laboratory hours per week.

Prerequisite(s): Completion of MATH U121 or higher; or placement into at least MATH U126.

Corequisite(s): BIOL U101.

BIOL U102 Introductory Biology II 4 Credit Hours

Fundamental principles of biology, including population genetics, evolution, systematics, and the diversity of life. Dissection of preserved specimens is required in laboratory. Designed for science majors. Three class and three laboratory hours per week.

Prerequisite(s): BIOL U101.

Corequisite(s): BIOL U102L.

BIOL U102L Introductory Biology II Lab 0 Credit Hours

Fundamental principles of biology, including population genetics, evolution, systematics, and the diversity of life. Dissection of preserved specimens is required in laboratory. Designed for science majors. Three class and three laboratory hours per week.

Prerequisite(s): BIOL U101.

Corequisite(s): BIOL U102.

BIOL U110 General Biology 4 Credit Hours

Current principles of cell biology, biochemistry, genetics, reproduction, development, and plant and animal diversity, as well as societal concerns. Not for major credit. Three class and three laboratory hours per week.

Corequisite(s): BIOL U110L.

BIOL U110L General Biology Lab 0 Credit Hours

Current principles of cell biology, biochemistry, genetics, reproduction, development, and plant and animal diversity, as well as societal concerns. Not for major credit. Three class and three laboratory hours per week.

Corequisite(s): BIOL U110.

BIOL U128 Anatomy & Physiology for Health Information Management I 3 Credit Hours

Survey of anatomical terminology, cell structure, and function, tissues, and integumentary, skeletal, muscular, and nervous systems. The conceptual framework, factual knowledge and critical skills reviewed are needed to pursue a career in health information management (HIM).

BIOL U129 Anatomy & Physiology for Health Information Management II 3 Credit Hours

Survey of the endocrine, lymphatic, cardiovascular, digestive, respiratory, reproductive, and urinary systems with some coverage of human development, human genetics, and immunology. The conceptual framework, factual knowledge, and critical skills reviewed are needed to pursue a career in health information management (HIM).

Prerequisite(s): BIOL U128.

BIOL U143 Foundations of Human Physiology. 3 Credit Hours

Fundamental principles in preparation for study of human anatomy and physiology, including the scientific method, inorganic chemistry, biochemistry, and cellular biology. Includes study skills specific to learning biological principles. Not for major credit.

Prerequisite(s): Completion of Anatomy and Physiology placement exam.

BIOL U143L Foundations of Human Physiology Laboratory 1 Credit Hour

Experiments, exercises, demonstrations to accompany BIOL U143. Three laboratory hours per week. Not for major credit.

Pre/Corequisite(s): BIOL U143.

BIOL U201 Science Career Catalyst 1 Credit Hour

An exploration of careers in biology and chemistry. Topics include self-assessment, career planning, interviewing, professional networking, resumes, and personal statements.

Prerequisite(s): Grade of C or better in BIOL U102.

Typically Offered: Upstate Fall Offering, Upstate Spring Offering
Cross-Listed: CHEM U201

BIOL U205 Introduction to Field Ornithology 3 Credit Hours

Basic morphology, ecology, behavior, evolution, identification, and natural history of birds with emphasis on the major groups and species found in South Carolina. Local and regional weekly field trips, including a weekend long trip focused on coastal and marine species identification and their natural history, are required. BIOL U205/BIOL U305 will be offered concurrently. Projects for students enrolled in BIOL U305 will be more in depth and the standard for grading will be more demanding. Students may not receive credit for both courses. BIOL U205 cannot be taken for major credit.

Prerequisite(s): Consent of instructor.

BIOL U205L Introduction to Field Ornithology Laboratory 1 Credit Hour

Additional hours in the application of avian field identification techniques and in the observation of the natural history traits and characteristics of the common and important birds of South Carolina and vicinity. BIOL U205L/BIOL U305L will be offered concurrently. Projects for students enrolled in BIOL U305L will be more in depth and the standard for grading will be more demanding. Students may not receive credit for both courses. BIOL U205L cannot be taken for major credit.

Pre/Corequisite(s): BIOL U205 or consent of instructor.

BIOL U206 Genetics and Society 3 Credit Hours

Fundamentals of genetics, with an emphasis on human genetics; relevance of recent advances and concerns in contemporary society related to genetic technology. Not for major credit.

BIOL U210 Piedmont Natural History 1 Credit Hour

Identification, ecology, and natural history of plants, animals, and fungi in the South Carolina Piedmont region. Some physical agility (e.g. hiking, walking on uneven ground) and occasional activities in inclement weather will be required. Not available for Biology major credit.

BIOL U220 Botany and Society 4 Credit Hours

Fundamentals of plant biology, including characteristics of major groups, life cycles, anatomy, development, ecology, evolution, economic uses, and environmental services. Laboratory exercises include hands-on, outdoors, and digital activities, such as growing plants, using identification keys, and analyzing patterns in plant diversity. Restricted to students in the contiguous United States, excluding CA, OR, and WA. Three lecture and three laboratory hours per week.

Corequisite(s): BIOL U220L.

BIOL U220L Botany and Society Laboratory 0 Credit Hours

Fundamentals of plant biology, including characteristics of major groups, life cycles, anatomy, development, ecology, evolution, economic uses, and environmental services. Laboratory exercises include hands-on, outdoors, and digital activities, such as growing plants, using identification keys, and analyzing patterns in plant diversity. Restricted to students in the contiguous United States, excluding CA, OR, and WA. Three lecture and three laboratory hours per week.

Corequisite(s): BIOL U220.

BIOL U230 Medical Terminology 3 Credit Hours

Introduction to medically oriented terminology, including roots, prefixes, suffixes, combining forms, and common abbreviations. Emphasis on using terminology related to anatomy, physiology, pathology, diagnoses, medical procedures, pharmacology, and instrumentation. Not for major credit.

Cross-Listed: NURS U230

BIOL U240 Human Biology and Society 3 Credit Hours

Fundamentals of functional human biology; development of a relevant knowledge of medical issues and concerns in contemporary society such as cloning, emerging diseases, genetic testing, cancer, emphysema, organ transplants and cardiovascular disease. Not for major credit.

BIOL U243 Human Anatomy and Physiology I 4 Credit Hours

Functional anatomy and physiology of the human body, including the integumentary, skeletal, muscular, and nervous systems. Not available for biology major credit. Three class and three laboratory hours per week.

Prerequisite(s): Appropriate score on anatomy and physiology placement test; and grade of B or better in high school chemistry or successful completion of college-level chemistry; or grade of C or better in BIOL U143.

Corequisite(s): BIOL U243L.

BIOL U243L Human Anatomy and Physiology I Lab 0 Credit Hours

Functional anatomy and physiology of the human body, including the integumentary, skeletal, muscular, and nervous systems. Not available for biology major credit. Three class and three laboratory hours per week.

Prerequisite(s): Appropriate score on anatomy and physiology placement test; and grade of B or better in high school chemistry or successful completion of college-level chemistry; or grade of C or better in BIOL U143.

Corequisite(s): BIOL U243.

BIOL U244 Human Anatomy and Physiology II 4 Credit Hours

Functional anatomy and physiology of the human body, including the circulatory, immune, respiratory, digestive, and reproductive systems, metabolism/nutrition, urinary and fluid balance. Three class and three laboratory hours per week. Not available for biology major credit.

Prerequisite(s): Grade of C or better in BIOL U243.

Corequisite(s): BIOL U244L.

BIOL U244L Human Anatomy and Physiology II Lab 0 Credit Hours

Functional anatomy and physiology of the human body, including the circulatory, immune, respiratory, digestive, and reproductive systems, metabolism/nutrition, urinary and fluid balance. Three class and three laboratory hours per week. Not available for biology major credit.

Prerequisite(s): Grade of C or better in BIOL U243.

Corequisite(s): BIOL U244.

BIOL U250 Principles of Microbiology 4 Credit Hours

Introduction to bacteria, viruses, and eukaryotic microbes. Emphasis on microbial growth, the human immune system, antimicrobials, and infectious diseases. Not for major credit. Three class and three laboratory hours per week.

Prerequisite(s): Four hours of biological science; and CHEM U109 or CHEM U111; or consent of instructor.

Corequisite(s): BIOL U250L.

BIOL U250L Principles of Microbiology Lab 0 Credit Hours

Introduction to bacteria, viruses, and eukaryotic microbes. Emphasis on microbial growth, the human immune system, antimicrobials, and infectious diseases. Not for major credit. Three class and three laboratory hours per week.

Prerequisite(s): Four hours of biological science; and CHEM U109 or CHEM U111; or consent of instructor.

Corequisite(s): BIOL U250.

BIOL U260 Emerging Infectious Diseases 3 Credit Hours

Topics include microbial structure, transmission and symptoms of infectious diseases, the history of pandemics, and the effects of infectious diseases on society.

BIOL U270 Environmental Science 3 Credit Hours

The interrelationship of humans and their environment emphasizing the impact of pollution on human health. Not for major credit.

BIOL U301 Introduction to Ecology and Evolutionary Biology 4 Credit Hours

Basic, applied, and theoretical ecology and the foundations of evolutionary biology. Laboratories illustrate lecture concepts and provide experience with fundamental skills of biostatistics, hypothesis testing, and scientific writing. Three classes and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U101 and BIOL U102.

Corequisite(s): BIOL U301L.

BIOL U301L Introduction to Ecology and Evolutionary Biology Lab. 0 Credit Hours

Basic, applied, and theoretical ecology and the foundations of evolutionary biology. Laboratories illustrate lecture concepts and provide experience with fundamental skills of biostatistics, hypothesis testing, and scientific writing. Three classes and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U101 and BIOL U102.

Corequisite(s): BIOL U301.

BIOL U302 Introduction to Cell and Molecular Biology 4 Credit Hours

Basic principles of the origin, evolution, function and diversity of cells. Emphasis is placed on molecular level approaches to the scientific study of eukaryotic cell function, physiology, metabolism, ultrastructure, and evolution, as well as the use of cells relevant to medical, biosocial, and bioenvironmental issues. Three class and three laboratory hours per week.

Prerequisite(s): BIOL U101 and BIOL U102.

Corequisite(s): BIOL U302L.

BIOL U302L Introduction to Cell and Molecular Biology Lab 0 Credit Hours

Basic principles of the origin, evolution, function and diversity of cells. Emphasis is placed on molecular level approaches to the scientific study of eukaryotic cell function, physiology, metabolism, ultrastructure, and evolution, as well as the use of cells relevant to medical, biosocial, and bioenvironmental issues. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U101 and BIOL U102.

Corequisite(s): BIOL U302.

BIOL U305 Field Ornithology 3 Credit Hours

Basic morphology, ecology, behavior, evolution, identification, and natural history of birds with emphasis on the major groups and species found in South Carolina. Local and regional weekly field trips, including a weekend long trip focused on coastal and marine species identification and their natural history, are required. BIOL U205/BIOL U305 will be offered concurrently. Projects for students enrolled in BIOL U305 will be more in depth and the standard for grading will be more demanding. Students may not receive credit for both courses. BIOL U205 cannot be taken for major credit.

BIOL U305L Field Ornithology Laboratory 1 Credit Hour

Additional hours in the application of avian field identification techniques and in the observation of the natural history traits and characteristics of the common and important birds of South Carolina and vicinity. BIOL U205L/BIOL U305L will be offered concurrently. Projects for students enrolled in BIOL U305L will be more in depth and the standard for grading will be more demanding. Students may not receive credit for both courses. BIOL U205L cannot be taken for major credit. Pre/Corequisite(s): BIOL U305 or consent of instructor.

BIOL U310 Invertebrate Zoology 4 Credit Hours

Phylogenetic and comparative aspects of anatomy, physiology, ecology, reproduction and embryology of the invertebrates. Dissection of preserved specimens is required. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301.

Corequisite(s): BIOL U310L.

BIOL U310L Invertebrate Zoology Lab 0 Credit Hours

Phylogenetic and comparative aspects of anatomy, physiology, ecology, reproduction and embryology of the invertebrates. Dissection of preserved specimens is required. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301.

Corequisite(s): BIOL U310.

BIOL U315 Human and Comparative Anatomy 4 Credit Hours

Comparative aspects of the anatomy of humans and other vertebrates. Strong emphasis is placed on the anatomy of humans, evolutionary history of human anatomical structures, and comparisons to other vertebrates. Dissection of preserved specimens is required. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; or consent of instructor.

Corequisite(s): BIOL U315L.

BIOL U315L Comparative Vertebrate Anatomy Lab 0 Credit Hours

Comparative aspects of the anatomy of humans and other vertebrates. Strong emphasis is placed on the anatomy of humans, evolutionary history of human anatomical structures, and comparisons to other vertebrates. Dissection of preserved specimens is required. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; or consent of instructor.

Corequisite(s): BIOL U315.

BIOL U320 General Botany 4 Credit Hours

Phylogenetic survey of the morphology, anatomy, physiology, life cycles, and taxonomy of the major plant divisions. Three lecture and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 or BIOL U302.

Corequisite(s): BIOL U320L.

BIOL U320L General Botany Lab 0 Credit Hours

Phylogenetic survey of the morphology, anatomy, physiology, life cycles, and taxonomy of the major plant divisions. Three lecture and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 or BIOL U302.

Corequisite(s): BIOL U320.

BIOL U330 Microbiology 4 Credit Hours

Introduction to bacteria, viruses, and eukaryotic microbes. Emphasis is placed on molecular processes of microbes, genetics and metabolism of microbes; diversity of microbes, pathogenic microbes and the human immune response to infection. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U302.

Corequisite(s): BIOL U330L.

BIOL U330L Microbiology Lab 0 Credit Hours

Introduction to bacteria, viruses, and eukaryotic microbes. Emphasis is placed on molecular processes of microbes, genetics and metabolism of microbes; diversity of microbes, pathogenic microbes and the human immune response to infection. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U302.

Corequisite(s): BIOL U330.

BIOL U350 Genetics 4 Credit Hours

Basic principles of transmission, molecular and population genetics. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

Corequisite(s): BIOL U350L.

BIOL U350L Genetics Lab 0 Credit Hours

Basic principles of transmission, molecular and population genetics. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

Corequisite(s): BIOL U350.

BIOL U360 Human and Comparative Physiology 4 Credit Hours

Comparative aspects of the physiology of humans and other animals. Emphasis is placed on comparative analysis of physiological systems, responses, and adaptations in humans and other animal species. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; and completion of BIOL U315 recommended but not required.

Corequisite(s): BIOL U360L.

BIOL U360L Human & Comparative Physiology Lab 0 Credit Hours

Comparative aspects of the physiology of humans and other animals. Emphasis is placed on comparative analysis of physiological systems, responses, and adaptations in humans and other animal species. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; and completion of BIOL U315 recommended but not required.

Corequisite(s): BIOL U360.

BIOL U370 Pathophysiology 3 Credit Hours

Disruptions of normal physiology, processes that bring about disruptions, and manifestations of disruptions.

Prerequisite(s): BIOL U244 or BIOL U360.

BIOL U375 Evolutionary Biology 4 Credit Hours

Historical development of evolutionary theory; natural and sexual selection; micro-and macroevolution; mass extinctions; current concepts of phylogeny and systematics; human evolution. Laboratories illustrate lecture concepts as well as readings from the primary literature. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

Corequisite(s): BIOL U375L.

BIOL U375L Evolutionary Biology Lab 0 Credit Hours

Historical development of evolutionary theory; natural and sexual selection; micro-and macroevolution; mass extinctions; current concepts of phylogeny and systematics; human evolution. Laboratories illustrate lecture concepts as well as readings from the primary literature. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

Corequisite(s): BIOL U375.

BIOL U395 Internship in Biological Science 1-3 Credit Hours

Supervised work experience in biological science. A minimum of three hours work per week is required for each credit hour. A contractual agreement signed by the supervisor, the student, the instructor and the division chair is required. Pass/Fail credit.

Prerequisite(s): Junior or senior standing; grade of C or better in BIOL U301 and BIOL U302.

BIOL U397 Laboratory Teaching 1 Credit Hour

Supervised participation in the preparation and teaching of undergraduate biological sciences laboratories. Duties include preparation of lab reagents, sample collection, and assisting lab instructors during laboratory periods. Not available for Biology major credit.

Prerequisite(s): Permission of instructor; and completion of BIOL U101 and BIOL U102.

BIOL U398 Topics in Biology 1-3 Credit Hours

Intensive study in selected areas. Individual topics are announced.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

BIOL U399 Independent Study 1-3 Credit Hours

Directed research project.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

BIOL U507 Developmental Biology 4 Credit Hours

Morphogenic patterns of embryonic development along with their molecular and cellular bases; and mechanisms of differentiation. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

Corequisite(s): BIOL U507L.

BIOL U507L Developmental Biology Lab 0 Credit Hours

Morphogenic patterns of embryonic development along with their molecular and cellular bases; and mechanisms of differentiation. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

Corequisite(s): BIOL U507.

BIOL U525 Plant Taxonomy 4 Credit Hours

The major classes of vascular plants found in South Carolina with an emphasis placed on plant reproductive biology, evolutionary relationships among groups, and species identification skills. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

Corequisite(s): BIOL U525L.

BIOL U525L Plant Taxonomy Lab 0 Credit Hours

The major classes of vascular plants found in South Carolina with an emphasis placed on plant reproductive biology, evolutionary relationships among groups, and species identification skills. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

Corequisite(s): BIOL U525.

BIOL U530 Histology 4 Credit Hours

The microscopic anatomy of human cells, tissues and organs. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; and CHEM U112.

Corequisite(s): BIOL U530L.

BIOL U530L Histology Lab 0 Credit Hours

The microscopic anatomy of human cells, tissues and organs. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; and CHEM U112.

Corequisite(s): BIOL U530.

BIOL U531 Parasitology 4 Credit Hours

Parasites of animals, with emphasis on the immunological, clinical and epidemiological aspects of human parasitism. Dissection of specimens is required. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; and CHEM U112.

Corequisite(s): BIOL U531L.

BIOL U531L Parasitology Lab 0 Credit Hours

Parasites of animals, with emphasis on the immunological, clinical and epidemiological aspects of human parasitism. Dissection of specimens is required. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; and CHEM U112.

Corequisite(s): BIOL U531.

BIOL U534 Animal Behavior 4 Credit Hours

Identification and classification of behavior patterns exhibited by various species of animals; the development of behavior; proximate and ultimate causes of behavior. Three hours class and three hours laboratory per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; and PSYC U101.

Corequisite(s): BIOL U534L.

BIOL U534L Animal Behavior Lab 0 Credit Hours

Identification and classification of behavior patterns exhibited by various species of animals; the development of behavior; proximate and ultimate causes of behavior. Three hours class and three hours laboratory per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; and PSYC U101.

Corequisite(s): BIOL U534.

BIOL U535 Neurobiology 3 Credit Hours

Introduction to neuroanatomical-functional relationships. Topics include neurodevelopment, anatomical organization of major nuclei and tracts, neurochemical mechanisms, neural integration of behavior, and the neuroanatomy of mental illness.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

BIOL U540 Immunology 4 Credit Hours

Introduction to the molecular and cellular basis of the immune response. Topics include anatomy of the lymphoid system, and innate immune response, lymphocyte biology, antigen-antibody interactions, humoral and cellular effector mechanisms; control of immune responses, and the evolution of immunodefense mechanisms. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301, BIOL U302 and CHEM U112.

Corequisite(s): BIOL U540L.

Pre/Corequisite(s): BIOL U330 or BIOL U350.

BIOL U540L Immunology Lab 0 Credit Hours

Introduction to the molecular and cellular basis of the immune response. Topics include anatomy of the lymphoid system, and innate immune response, lymphocyte biology, antigen-antibody interactions, humoral and cellular effector mechanisms; control of immune responses, and the evolution of immunodefense mechanisms. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301, BIOL U302 and CHEM U112.

Corequisite(s): BIOL U540.

Pre/Corequisite(s): BIOL U330 or BIOL U350.

BIOL U550 Molecular Cell Biology 4 Credit Hours

Structure and functions of nucleic acids and proteins; molecular arrangement of prokaryotic, and eukaryotic genomes; the processes of DNA replication, DNA repair, gene transcription, and protein translation; control and coordination of gene activity as they relate to cellular processes in normal and disease states. Techniques used in contemporary molecular biology labs including recombinant DNA, electrophoresis of nucleic acids and proteins, Western blotting, and bioinformatics are covered in the laboratory. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; and eight hours of chemistry.

Corequisite(s): BIOL U550L.

BIOL U550L Molecular Cell Biology Lab 0 Credit Hours

Structure and functions of nucleic acids and proteins; molecular arrangement of prokaryotic, and eukaryotic genomes; the processes of DNA replication, DNA repair, gene transcription, and protein translation; control and coordination of gene activity as they relate to cellular processes in normal and disease states. Techniques used in contemporary molecular biology labs including recombinant DNA, electrophoresis of nucleic acids and proteins, Western blotting, and bioinformatics are covered in the laboratory. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302; and eight hours of chemistry.

Corequisite(s): BIOL U550.

BIOL U560 Virology 3 Credit Hours

Introduction to viruses. Topics include viral structure, viral replication cycles, and viral diversity with an emphasis on human viruses and their effects on human and public health.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

BIOL U570 Principles of Ecology 4 Credit Hours

Interactions of organisms and the environment; ecosystems structure and functions. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

Corequisite(s): BIOL U570L.

BIOL U570L Principles of Ecology Lab 0 Credit Hours

Interactions of organisms and the environment; ecosystems structure and functions. Three class and three laboratory hours per week.

Prerequisite(s): Grade of C or better in BIOL U301 and BIOL U302.

Corequisite(s): BIOL U570.

BIOL U581 Biochemistry I 3 Credit Hours

Structure and function of the major classes of biological compounds and biological membranes. Content includes a kinetic and equilibrium based approach to biological transport and catalysis, signaling, and an introduction to bioenergetics.

Prerequisite(s): C or better in CHEM U332; or consent of instructor.

BIOL U582 Biochemistry II 3 Credit Hours

Chemistry of biological information pathways. DNA, RNA, and protein metabolism, organization of genes on chromosomes, regulation of gene expression, and applications of these topics to biotechnology problems are covered.

Prerequisite(s): BIOL U581 or CHEM U581; or consent of instructor.

BIOL U583L Biochemistry Laboratory 1 Credit Hour

A survey of laboratory methods in biochemistry. Three laboratory hours per week.

Pre/Corequisite(s): BIOL U581, BIOL U582, CHEM U581 or CHEM U582.

BIOL U599 Senior Seminar 3 Credit Hours

Integration of biological knowledge at an advanced level and exploration of ethical issues.

Prerequisite(s): Statistics; SPCH U201; grade of C or better in BIOL U301 and BIOL U302; and 12 hours of additional biology coursework at the 300 level or above.