

BIOLOGY (BIO)

BIO 101 Introductory Biology (3 Credits)

An introduction to biological processes and principles including: (1) the nature of science, (2) origin of life and evolution, (3) the chemical basis of life, (4) cells and cellular events, (5) reproduction and genetics, (6) organismal structure and function, and (7) ecosystems. Contemporary applications of these topics will be discussed. The course may also be of interest to non-science majors who want a science based elective.

Offered as needed.

This course may satisfy the general education core: Sustainability Dialogues.

Essential Learning Outcomes for Medaille College: Science and Technological Reasoning, Critical Thinking and Quantitative Reasoning

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 101L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 101L Introductory Biology Lab (1 Credit)

An introduction to biological processes and principles including: (1) the nature of science, (2) evolution, (3) the chemical basis of life, (4) cells and cellular events, (5) reproduction and genetics (6) beginning of zoology.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 101

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 40

BIO 110 Human Nutrition (3 Credits)

An introduction to human nutrition covering topics such as energy, protein, fat and carbohydrate requirements. Vitamin and mineral requirements and nutrition through the life cycle are also examined. The course may also be of interest to non-science majors who want a science based elective. Offered as needed

This course may satisfy the general education core: Sustainability Dialogues.

Essential Learning Outcomes for Medaille College: Critical Thinking, Quantitative Reasoning, Scientific Reasoning and Technological Reasoning

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 120 Botany (4 Credits)

A study of plant structure, physiology, and classification. Fundamental concepts of genetics and evolution will be introduced. Special emphasis will be placed on the ecological importance and economic value of plants. Travel time to and from off-campus, activities may be required. This course may also be of interest to non-science majors who want a science based elective. Offered as needed

This course may satisfy the general education core: Sustainability Dialogues.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 120L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 20

BIO 120L Botany Lab (0 Credit)

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 120

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 140E Introductory Human Anatomy And Physiology I (4 Credits)

This course provides an introduction to the cell and tissue levels of organization of the skeletal, muscular and nervous systems of the human body including the physiology of those systems and their interrelationships. Students will engage in a series of online laboratory activities in order to clarify, apply, and enhance course concepts. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: ENG 111E and (GEN 111E or 310E).

Co-Requisites: None

Fees: None

BIO 141E Introductory Human Anatomy And Physiology II (4 Credits)

A continuation of BIO 140E. Topics include the endocrine, circulatory, digestive, lymphatic, respiratory, excretory, and reproductive systems. Students will engage in a series of online laboratory activities in order to clarify, apply, and enhance course concepts. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO 140E.

Co-Requisites: None

Fees: None

BIO 150 Environmental Studies (3 Credits)

An introduction to ecological theory, natural and man-made environmental problems and human population dynamics. The interaction of science and society in creating and solving environmental problems is emphasized. Students are challenged to question their own attitudes concerning man and nature. The course may also be of interest to non-science majors who want a science based elective. Offered as needed

This course may satisfy the general education core: Sustainability Dialogues.

Essential Learning Outcomes for Medaille College: Critical Thinking, Quantitative Reasoning, Scientific Reasoning and Technological Reasoning

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 150E Environmental Studies (3-4 Credits)

An introduction to ecological theory, natural and man-made environmental problems and human population dynamics. The interaction of science and society in creating and solving environmental problems is emphasized. Students are challenged to question their own attitudes concerning man and nature. The course may also be of interest to non-science majors who want a science based elective. Offered as needed

This course may satisfy the general education core: Sustainability Dialogues

Essential Learning Outcomes for Medaille College: Critical Thinking, Quantitative Reasoning, Scientific Reasoning and Technological Reasoning

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Fees: None

BIO 150X Environmental Studies (3 Credits)

An introduction to ecological theory, natural and man-made environmental problems and human population dynamics. The interaction of science and society in creating and solving environmental problems is emphasized. Students are challenged to question their own attitudes concerning man and nature. The course may also be of interest to non-science majors who want a science based elective. Offered as needed

This course may satisfy the general education core: Sustainability Dialogues

Essential Learning Outcomes for Medaille College: Critical Thinking, Quantitative Reasoning, Scientific Reasoning and Technological Reasoning

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 160 Human Anatomy and Physiology I (3 Credits)

This course initiates the study of the human body. Topics include the chemical basis of life, cells and cellular events, tissues, and the skeletal, muscular and nervous systems. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 160L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 20

BIO 160E Human Anatomy & Physiology II (4 Credits)

This course initiates the study of the human body. Topics include the chemical basis of life, cells and cellular events, tissues, and the skeletal, muscular and nervous systems. Offered as needed

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Fees: 50

BIO 160L Human Anatomy and Physiology L (1 Credit)

This course includes experiments and demonstrations designed to correlate with Lecture topics presented in BIO 160. This course initiates the study of the human body. Topics include the chemical basis of life, cell and cellular events, tissues and the skeletal, muscular and nervous systems. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 160

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 161 Human Anatomy & Physiology II (3 Credits)

A continuation of BIO 160. Topics include the endocrine, circulatory, digestive, respiratory, excretory, and reproductive systems. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO 160 and 160L.

Co-Requisites: BIO 161L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 20

BIO 161E Human Anatomy & Physiology II (4 Credits)

A continuation of BIO 160E. Topics include the endocrine, circulatory, digestive, respiratory, excretory, and reproductive systems. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO 160E.

Co-Requisites: None

Fees: 50

BIO 161L Human Anatomy & Phys. II Lab (1 Credit)

A continuation of BIO 160. This course includes experiments and demonstrations designed to correlate with Lecture topics presented in BIO 161. Topics include the endocrine, circulatory, digestive, respiratory, excretory and reproductive systems. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO 160 and 160L.

Co-Requisites: BIO 161

Fees: None

BIO 170 Comparative Anatomy and Physiology I (4 Credits)

Lecture exercises that provide an introduction to the major animal phyla and comparison of their life processes. Topics include cell structure and function, energy transformation, major body systems, genetics and behavior. Each of these topics is viewed from an evolutionary perspective to highlight the unity and diversity within the animal kingdom. Detailed study of mammalian anatomy, physiology, and histology is initiated. Offered as needed.

Essential Learning Outcomes for Medaille College: Scientific Reasoning

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 170L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 85

BIO 170L Comparative Anatomy and Physiology I Lab (1 Credit)

This special topic course is designed for students who have successfully completed the appropriate coursework in animal Anatomy and Physiology laboratory at another institution and desire to receive full credit for BST170L (Becker Comparative Anatomy and Physiology Laboratory I). This study provides the general biology and zoology content which is a major constituent of BST170L. Laboratory activities will introduce the essential concepts in biology including scientific methodology, the microscope, animal cells, evolution and introduction to the major animal phyla and comparison of their life processes. Biology topics are viewed from an evolutionary perspective to highlight the unity and diversity within the animal kingdom. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 170

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 85

BIO 171 Comparative Anatomy and Physiology II (4 Credits)

A continuation of BIO 170 Exploration of mammalian anatomy, physiology and histology are emphasized. The animal is seen in its life processes and activities. The physiological aspects of the mammalian body are explored. Specific anatomical differences in other species are noted. Methods involved in the preparation of tissue slides for histological examination are introduced. Offered as needed

Essential Learning Outcomes for Medaille College: Scientific Reasoning

Department: Science, Mathematics Technol

Pre-Requisites: BIO 170.

Co-Requisites: BIO 171L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 85

BIO 171L Comparative Anatomy and Physiology II Laboratory (1 Credit)

This course includes experiments and demonstrations designed to correlate with Lecture topics presented in BIO 171. Laboratories to study both gross and microscopic anatomy. Models for examination are the dog, cat, horse and cow. The animal is seen in its life process and activities. The physiological aspects of the mammalian body are explored. Specific anatomical difference in other species are noted. Methods involved in the preparation of tissue slides for histological examination are introduced. Histological slides are part of the laboratory exercises. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO 170 and 170L.

Co-Requisites: BIO 171

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 85

BIO 172E Comparative Anatomy and Physiology for Veterinary Science (4 Credits)

This course covers the Anatomy and Physiology of Domestic Animals relevant to the duties and responsibilities of the Veterinary Technician. Major systems will be examined with an emphasis on their structure, function and interrelationships. Included is a laboratory examination of the cat. Other pertinent anatomical areas required for proper body function will also be covered. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Fees: None

BIO 172X Comparative Anatomy and Physiology for Veterinary Science (4 Credits)

This course covers the Anatomy and Physiology of Domestic Animals relevant to the duties and responsibilities of the Veterinary Technician. Major systems will be examined with an emphasis on their structure, function and interrelationships. Included is a laboratory examination of the cat. Other pertinent anatomical areas required for proper body function will also be covered. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Fees: 1025

BIO 173X Introduction to Comparative Anatomy and Physiology for Domestic Animals (4 Credits)

This course covers Anatomy and Physiology of Domestic Animals relevant to the duties and responsibilities of the Veterinary Technician. This is the first in a series of two courses that will explore the organ systems and how they function in healthy animals. The material covered in this first section will introduce anatomical terminology, the structure and function of the integumentary system, skeletal system, muscular system, nervous system and the special senses. These systems will be examined with an emphasis on interrelationships in the body to maintain homeostasis. Included will be one laboratory session to examine the organ systems covered in this session of the course by a virtual or gross dissection of the rabbit, cat, or dog. Material for all body systems will be distributed over two courses. *Note: A completed Rabies inoculation series is required for this course or proof of appropriate titer. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: SCI 131.

Co-Requisites: None

Fees: 50

BIO 174X Comparative Anatomy and Physiology for Domestic Animals (4 Credits)

This course covers Anatomy and Physiology of Domestic Animals relevant to the duties and responsibilities of the Veterinary Technician. This is the second in a series of two courses that will explore the organ systems and how they function in healthy animals. The material covered in this second section will introduce the structure and function of the cardiovascular, lymphatic and immune systems as well as the respiratory, digestive, urinary, endocrine and reproductive systems. These systems will be examined with an emphasis on interrelationships in the body to maintain homeostasis. Included will be one laboratory session to examine the organ systems covered in this session of the course by a virtual or gross dissection of the rabbit, cat, or dog. This course will end with a cumulative examination of all body systems discusses in the series of two courses. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO 173X.

Co-Requisites: None

Fees: 50

BIO 200 Microbiology (3 Credits)

A survey of microscopic organisms including their morphology, nutrition, physiology, and interactions with humans and animals. Microorganisms surveyed include bacteria, viruses, and fungi. Principles of immunology and the inflammatory response are discussed. Offered As Needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 170 and 170L) or (BIO 160 and 160L).

Co-Requisites: BIO 200L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 200L Microbiology Lab (1 Credit)

Study of microorganisms to include bacteria and fungi with emphasis on laboratory methodology and the structure and function of common microorganisms of medical relevance. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 170 and 170L) or (BIO 160 and 160L).

Co-Requisites: BIO 200

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 60

BIO 220 Cell Biology (3 Credits)

The study of the biology of eukaryotic and prokaryotic cells. Topics include the chemical composition and organization of cells, the function of organelles and cell specialization. Cellular reproduction, regulation of gene expression and cell signaling will be emphasized. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 161 and 161L) or (BIO 171 and 171L) and CHE %.

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 230 Foundations of Domestic Animal Health and Welfare (3 Credits)

This course builds on the information presented in Vet 100 Introduction to Veterinary Technology. Ethics and laws governing animal welfare will be analyzed. The states of wellness and disease of both small and large animals will be presented in regard to nutrition, prevention, and control. The course will explore the husbandry and housing of canine, feline, equine, bovine, porcine and small ruminants. Common procedures, handling, behavior and vaccination protocols of common domestic species will be presented. Offered as needed.

Department: Veterinary Technology

Pre-Requisites: (VET 100 and BIO 101) or (BIO 160) or (BIO 170).

Co-Requisites: None

Restrictions: Students who are registered in the following programs may not enroll:

- AAS-ALP-VETE
- AAS-ALP-VETR
- AAS-VET-E
- AS-VET
- BS-VET

Fees: None

BIO 298 Special Topic in Biology (2 Credits)

Topic to be specified each semester course offered.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 301 Epidemiology and Biostatistics (3 Credits)

This course provides an introduction to descriptive and inferential statistical techniques using computer statistical software. Topics such as hypothesis testing and interpretation of data from health, behavior, ecological and epidemiologic research will be covered. The course will also review the methods used in epidemiologic research, including the calculation of rates, sampling theory, and types of studies. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 161 or 171) and MAT 114.

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 303 Toxicology (3 Credits)

This course is an introduction to the fundamental principles of toxicology. Topics include the history and scope of toxicology, the mechanisms of toxicity, and risk assessment. Depending upon the specialized areas of interest of the instructor, students are also introduced to broader subjects in the discipline such as environmental toxicology, clinical toxicology, and forensic toxicology. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 161 or 171) and CHE %.

Co-Requisites: None

Fees: None

BIO 310 Immunology (3 Credits)

The course is designed to provide students with in-depth knowledge of the current principles of immunology. Both humoral and cellular immune responses will be examined in terms of the cells involved and the method in which the cells recognize and react to foreign antigens. Several disease states that are controlled by host immunity will also be included. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO 200 and CHE %.

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 312E Pathophysiology and Pharmacology I (4 Credits)

This course is the first half of a detailed investigation into pathophysiology and pharmacology. Students examine the biological and physical manifestations of a wide variety of diseases and conditions, the appropriate medical procedures, and the related pharmacology, as well as the ways in which this information is used in coding, medical transcription, and data analysis. Pathophysiology and Pharmacology I examines basic pharmacology and pathophysiology concepts; infectious diseases; endocrine, deficiency, and immunity disorders; mental disorders; the nervous system; sense organs; and the cardiovascular system. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Fees: None

BIO 313E Pathophysiology and Pharmacology II (4 Credits)

This course is the second half of a detailed investigation into pathophysiology and pharmacology. Students examine the biological and physical manifestations of a wide variety of diseases and conditions, the appropriate medical procedures, and the related pharmacology, as well as the ways in which this information is used in coding, medical transcription, and data analysis. Pathophysiology and Pharmacology II examine the respiratory system, the digestive system, the integumentary system, the musculoskeletal system, the genitourinary system, obstetrics and newborns, as well as injury and trauma. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Fees: None

BIO 320 Ecology (4 Credits)

The study of the relationships of organisms to their environment. Topics include the ecology of individual organisms as well as population, community, and ecosystem ecology. Application of ecological principles to issues of environmental concern such as pollution, conservation, and land use will be considered. Additional student time outside of scheduled class and laboratory hours may be required for assignments and/or travel to and from off-campus activities. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO %.

Co-Requisites: BIO 320L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 20

BIO 320L Ecology Lab (0 Credit)

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 320

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 330 Genetics (3 Credits)

A study of the fundamental concepts of transmission, molecular and population genetics. Mendelian principles and their applications are explored; the chemical and physical structure of chromosomes, genetic linkage and mapping are included. Expression of genetic material, chromosomal organization, mutations and mechanisms of recombination are discussed. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: CHE % and BIO %.

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 340 Animal Behavior (3 Credits)

This course covers the natural behavior of animals, providing a broad examination of genetic, neural, developmental, ecological, social and evolutionary aspects of behavior. Specific discussion will focus on sexual and parental behavior, migration, communication, aggression, and learning. Summarization will address behavior problems, methods of intervention and solutions pertaining to companion and farm animals. An outside field trip is required. Comparative studies will be used for helping to understand human behavior. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO %.

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 370 Advanced Vertebrate Physiology I (3 Credits)

An investigation into comparative vertebrate physiology of the nervous, muscular, hematologic, cardiovascular, respiratory and excretory systems as they relate to environmental adaptation, health and disease states. Analysis of organ system physiology in whole animal survival is emphasized. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 161 and 161L) or (BIO 171 and 171L).

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 371 Advanced Vertebrate Physiology II (3 Credits)

An investigation into comparative vertebrate physiology of the digestive, reproductive and endocrine systems as they relate to environmental adaptation, health and disease states. Thermoregulatory mechanisms are explored. Analysis of organ system physiology in whole animal survival is emphasized. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO 370.

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 377 Biology Internship (3 Credits)

Observational and "hands-on" introduction to biology applications through field placement in a consulting firm, state or federal government agency, or other biologically related placement. This internship course offers students a structured, supervised opportunity to design their own learning within the context of their department's expectations, goals and objectives of enhancing students' academic and professional development and the needs of their host organization. A minimum of 90 hours is required for this field experience. Included in the internship is 15 hours of in-class instruction. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 161 or 171) and BIO 200, ENG 200, MAT 115 and CHE 201.

Co-Requisites: None

Fees: None

BIO 421 Ichthyology (4 Credits)

This course is an exploration of the taxonomy and biological characteristics of fish, including their anatomy and physiology, life history, ecology and distribution. The relationship of fishes to man will be examined. The laboratory will include identification of native and exotic species, surface and internal anatomy, and field trips to examine specimens in their natural and/or captive environments. Special emphasis is placed on the identification and life history of native New York fauna. Field trips may require time outside of normally scheduled class and/or lab. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 161 and 161L) or (BIO 171 and 171L).

Co-Requisites: BIO 421L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 30

BIO 421L Ichthyology (0 Credit)

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 421

Fees: None

BIO 422 Herpetology (4 Credits)

This course is an exploration of the taxonomy and biological characteristics of reptiles and amphibians, including their anatomy and physiology, life history, ecology and distribution. The relationship of herptiles to man will be examined. The laboratory will include identification of native and exotic species, surface and internal anatomy, and field trips to examine specimens in their natural and/or captive environments. Special emphasis is placed on the identification and life history of native New York fauna. Field trips may require time outside of normally scheduled class and/or lab. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 161 and 161L) or (BIO 171 and 171L).

Co-Requisites: BIO 422L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 30

BIO 422L Herpetology Lab (0 Credit)

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 422

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 423 Ornithology (4 Credits)

This course is an exploration of the taxonomy and biological characteristics of birds, including their anatomy and physiology, life history, ecology and distribution. The relationship of avians to man will be examined. The laboratory will include identification of native and exotic species, surface and internal anatomy, and field trips to examine specimens in their natural and/or captive environments. Special emphasis is placed on the identification and life history of native New York fauna. Field trips may require time outside of normally scheduled class and/or lab. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 161 and 161L) or (BIO 171 and 171L).

Co-Requisites: BIO 423L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 30

BIO 423L Ornithology Lab (0 Credit)

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 423

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 424 Mammalogy (4 Credits)

This course is an exploration of the taxonomy and biological characteristics of mammals, including their anatomy and physiology, life history, ecology and distribution. The relationship of mammals to man will be examined. The laboratory will include identification of native and exotic species, surface and internal anatomy, and field trips to examine specimens in their natural and/or captive environments. Special emphasis is placed on the identification and life history of native New York fauna. Field trips may require time outside of normally scheduled class and/or lab. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 161 and 161L) or (BIO 171 and 171L).

Co-Requisites: BIO 424L

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: 40

BIO 424L Mammalogy Lab (0 Credit)

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: BIO 424

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 430 Organic Evolution (3 Credits)

This course will explore the evolutionary process in detail and will address the rationale underlying evolutionary theory. Topics include the evidence for evolution, the mechanisms of evolutionary change, and the measurement of evolutionary change, speciation and the analysis of phylogeny. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: (BIO 161 and 161L) or (BIO 171 and 171L) and BIO 330, MAT 114 and CHE %.

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 470 Developmental Biology (3 Credits)

An intensive examination of developmental biology from both the classical and contemporary perspectives. Topics include fundamental concepts such as nuclear totipotency, cell determination, induction, and morphogenesis interspersed with modern genetic and molecular analyses of development. Current issues in developmental biology will also be addressed. Offered as needed.

Department: Science, Mathematics Technol

Pre-Requisites: BIO 220 and 330.

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None

BIO 498 Independent Study in Biology (1-5 Credits)

Topic to be specified each semester course offered.

Department: Science, Mathematics Technol

Pre-Requisites: None

Co-Requisites: None

Restrictions: Enrollment is limited to Undergraduate level students.

Fees: None