BIOLOGY (BIO)

BIO 111 Concepts of Biology/LAB (4 Credits)
Introduction to a wide range of biological topics, from the organism, ecology, and evolution to the cell, molecular biology, and genetics. This course is intended for non-Science majors. Co-Requisite: LAB 111
Corequisite: LAB 111

BIO 121 Introduction to Fisheries and (3 Credits)
This course will introduce students to the Fisheries & Wildlife Biology curriculum and profession. Topics include the history and future directions of the fish and wildlife profession, specialties within the profession, coursework and training necessary for professional preparation, and opportunities for field experience.

BIO 124 Environmental Science (3 Credits)
This course is an introduction to the environmental sciences and human impacts on the environment. Emphasis is placed on sustainability in a changing world.

BIO 150 General Biology I/LAB (4 Credits)
This course will focus on the "Study of Life" at a cellular and physiological level. Basic concepts such as cellular components, cellular physiology, and genetics will be explored.
Co-Requisite: LAB 150

BIO 151 General Biology II/LAB (4 Credits)
This course focuses on the "Study of Life" at an evolutionary and ecological perspective. Basic concepts such Darwin's evolution, conservation, and human impacts and ecological footprint on the planet is explored.
Co-Requisite: LAB 151

BIO 220 Anatomy and Physiology I (4 Credits)
This course will explore the relationships between the structures and functions of the human body. Students will also learn the mechanisms for maintaining homeostasis within the human body. Lab is included in this course.
Prerequisite: BIO 111/LAB 111 OR BIO 150/LAB 150

BIO 221 Anatomy and Physiology II/Lab (4 Credits)
This is the second of two courses that provide an in-depth introduction to the structure and function of human organ systems. The following systems are examined: endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary, and reproductive. Both gross and microscopic structures are studied.

BIO 230 Ecology (3 Credits)
This course is an introduction to the principles of Ecology, including those that govern survival, growth, distribution, and abundance of organisms. A focus is on the interactions and relationships among populations in ecological communities and ecosystems.
Prerequisite: BIO 151

BIO 312 Evolution (3 Credits)
A study of evolution beginning with the origin of life and characterizing biological mechanisms of evolution leading to present biodiversity.
Prerequisite: BIO 151

BIO 315 Introduction to Genetics (3 Credits)
A study of classical genetics, gene structure, and mechanisms of gene expression.
Prerequisite: BIO 150.

BIO 320 Botany and Plant Systematics (3 Credits)
This course covers plant biology and systematics with a focus on variation between selected families and orders of vascular plants. Students are introduced to basic plant structure and function as well as the identification, collection, handling and preservation of specimens.
Prerequisite: BIO 151

BIO 333 Population Biology (3 Credits)
This course examines the ecological factors that cause fluctuation and regulation of natural populations and emphasizes the utility of
Prerequisite: BIO 150, BIO 151, BIO 230, MTH 107

BIO 425 Ichthyology (3 Credits)
This course explores the biology and zoology of fishes: anatomy, taxonomy, evolution, physiology, behavior, ecology, zoogeography, and conservation. Students will compare aquatic habitats, assess patterns of phylogenetic relationships, ecological relationships of various aquatic environments.
Prerequisite: BIO 150, BIO 151, BIO 230

BIO 426 Birds and Mammals (3 Credits)
This course explores avian and mammalian biology, including anatomy and physiology, behavior, ecology, evolution and conservation. Hands-on exercises will be integrated with lecture to emphasize taxonomy and identification.
Prerequisite: BIO 150, BIO 151, BIO 230

BIO 431 Wildlife Management & Restoration (4 Credits)
Theory and methods of management of game and non-game populations are studied. Principles of endangered species and invasive species management include case studies of local and regional populations. The focus is on issues of the Northern Plains.
Prerequisite: BIO 150, BIO 151, BIO 230

BIO 432 Techniques in Wildlife Pop. Assess (3 Credits)
This course will examine the techniques used by managers and researchers when working with wildlife. Topics covered in the course include: study design, radio telemetry, passive monitoring techniques, animal capture and handling, population estimation, and quantifying vegetation and habitat usage.
Prerequisite: BIO 150, BIO 151, BIO 230, MTH 107 and MTH 210 -
Corequisite: MTH 342

BIO 433 Aquatic Ecology (3 Credits)
This course focuses on the physical, chemical, and biological processes in lakes, streams, and wetlands. The physical and chemical aspects of aquatic systems, and aquatic organisms life cycles and adaptations will be analyzed. A major theme of the course will be human impact on aquatic ecosystems.
Prerequisite: BIO 150, BIO 151, BIO 230

BIO 438 Fisheries Management (3 Credits)
This course introduces fisheries science and management including the biology, ecology, management, and
Prerequisite: BIO 150, BIO 151, BIO 230

BIO 439 Conservation Biology (3 Credits)
This course provides an overview of conservation biology, the scientific method, the biological principles behind conservation techniques and strategies, and the complexities involved in attempting to influence and implement conservation-oriented policies.
Prerequisite: BIO 150, BIO 151, BIO 230

BIO 460 Advanced Cellular Biology (3 Credits)
This course is an in-depth look into cellular structure and cellular function, organelle physiology, the cell cycle, cellular trafficking, and cellular communication. The focus will be on the internal functioning of eukaryotic and the interaction between cells in a multicellular organism.
Prerequisite: BIO150

BIO 470 Microbial Ecology (3 Credits)
This course examines the relationship of the environment to microorganisms within the living (biotic) and nonliving (abiotic) parts of the ecosystems. It provides a survey of the essential ecological roles of microbes in our biosphere and environmental management.
Prerequisite: BIO 150, BIO 151, and BIO 202

BIO 475 Conservation Biology (3 Credits)
This course provides the theoretical and practical study of conserving biodiversity at the genetic, species, and ecosystem levels. An emphasis is placed on strategies for mitigating multiple, concurrent threats to biodiversity.
Prerequisite: BIO 151 and BIO 315

BIO 499 Special Topics (1-3 Credits)
This course covers a variety of topics in bat ecology.