

Biology

The Biology department provides high quality educational experiences in the biological sciences including: environmental science, general biology for majors and non-majors, nutrition, medical terminology, forensic science, biology of women, human anatomy and physiology for majors and non-majors, and microbiology. The faculty believe biology occupies a central position in the physical sciences and that an understanding of fundamental biological principles enables students to make better-informed decisions for work and life roles. The biology faculty promote active learning in lecture and lab activities, interacting closely with students at various levels of academic development. Biology courses serve the College and students by providing offerings that satisfy requirements for general education, allied health and pre-professional transfer programs. Biology faculty are committed to excellence in teaching and scholarship providing a variety of lab/field experiences and online applications.

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BIOL 1471 Medical Terminology

This online course covers how bio/medical terms are constructed from Greek and Latin word elements including roots, combining forms, prefixes, and suffixes. Definitions, spelling, pronunciation, and applications of these terms will be stressed. Diseases and treatments specific to the body's organ systems will also be covered. This course is useful for anyone who desires a better understanding of medical language. (Prerequisite(s): READ 0721 with a grade of "C" or better or appropriate assessment score) 2C/2/0/0

BIOL 1725 Environmental Science

This course covers basic scientific and ecological principles, including an understanding of how the earth functions, how humans are affecting the earth, and proposed solutions to many of the environmental problems we face. Specific topics include: ecology, human population growth, biotechnology, pollution, human impacts on climate, energy resources, and waste management. Students will be required to take positions on environmental issues and alternative future scenarios. In-class activities will include group discussions and video and the use of internet-based resources. Two hours of lab per week are required and include group experiments, computer simulations, outdoor lab activities, and field trips. Traditional, hybrid, and online sections are available. (Prerequisite(s): READ 0721 with a grade of "C" or better or appropriate assessment score) (MnTC: Goals 3 & 10) 4C/3/1/0

BIOL 1730 Human Body Systems

This course begins with a study of the structural organization of the human body and then proceeds with the study of cell structure, types of tissues and basic anatomy and physiology of major organ systems of the human body. The central theme will focus on how the body systems work together to maintain homeostasis and good health. Laboratory activities include the dissection of a preserved animal and animal organs. The course is intended for all interested students and required for programs like Medical Laboratory Technician, Practical Nursing, Respiratory Therapy Technician, and Pharmacy Technician. Traditional and hybrid sections are available. Two hours of lab per week are required. (Prerequisite(s): READ 0721 with a grade of "C" or better or appropriate assessment score) (MnTC: Goal 3) 3C/2/1/0

BIOL 1735 Understanding Biology

This course is designed for non-science majors or as a preparation for BIOL 1740. A basic introduction to the principles of cell biology and genetics will be covered. The course will also examine the plant and animal kingdoms and general principles of ecology and evolution. One main goal of this course is to provide students with an understanding of biology that will allow them to evaluate and make informed opinions about related current events. Two hours of lab per week are required. (Prerequisite(s): READ 0721 with a grade of "C" or better or appropriate assessment score) (MnTC: Goal 3) 4C/3/1/0

BIOL 1740 General Biology 1: The Living Cell

This course is a study of biological processes including cell chemistry, metabolism, reproduction, genetics, and complex cell physiology. The lab component covers the application of concepts through observation, experimentation, and problem analysis. This course is intended for biology majors and students requiring a strong biological background for selected majors, including nursing and other allied health fields, and interested non-majors. BIOL 1740 is a prerequisite for BIOL 2721 Human Anatomy and Physiology 1, BIOL 2750 General Microbiology, and BIOL 1745 General Biology 2: The Living World. Traditional, hybrid and online sections are available. Three hours of lab per week are required. (Prerequisite(s): READ 0722 with a grade of "C" or better, or concurrent enrollment, or appropriate assessment score.) (MnTC: Goal 3) 5C/4/1/0

Information is subject to change.
This course information is not a contract.

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BIOL 1745 General Biology 2: The Living World

This course covers biological processes, including a survey of life forms (viruses, bacteria, protists, fungi, plants, and animals), their evolution, and ecology. The laboratory focuses on organism taxonomy, classification, and mammalian systems including comparative anatomy, organism dissections, ecological interrelationships of organisms and their environment. Three hours of lab per week are required and some activities involve the dissection of preserved animals and animal organs. Traditional, hybrid and online sections are available. (Prerequisite(s): BIOL 1740 General Biology 1: The Living Cell with a grade of “C” or better) (MnTC: Goals 3 & 10) 5C/4/1/0

BIOL 1760 Nutrition

This course explores the science of nutrition, including healthy diet fundamentals and the roles of carbohydrates, proteins, fats, vitamins, and minerals in health and fitness. Topics such as dietary guidelines, risk factors for illnesses linked to nutrition, and how the media influences personal diet choices will be covered. Hunger and the global environment as it relates to nutrition will also be covered. This course includes hands-on, lab-like activities related to nutrition and health. Traditional, hybrid, and online sections are available. (Prerequisite(s): READ 0721 with a grade of “C” or better or appropriate assessment score) (MnTC: Goal 3) 3C/3/0/0

BIOL 1782 Introduction to Forensic Science

This course provides an introduction to Forensic Science. General biological concepts and their applications to various scientific principles and techniques used in Forensic Biology will be covered. Specific topics include chromatography, hair and fiber analysis, fingerprinting, blood spatter and typing, DNA typing, and forensic entomology. This course is intended for students in liberal arts and sciences, other related science fields, and interested non-science majors and can be used to fulfill the science lab requirement. Two hours of lab per week are required. Traditional, hybrid and online sections are available. (Prerequisite(s): READ 0721 with a grade of “C” or better or appropriate assessment score) (MnTC: Goal 3) 4C/3/1/0

BIOL 1785 Biology of Men and Women

This course is designed to allow students to explore significant facets of woman from many different angles across her life span from conception, through puberty, pregnancy, birthing and aging including specific health concerns ranging from osteoporosis, breast cancer, heart disease mental disorders and other chronic illnesses. Topics that will be covered include reproductive anatomy and physiology of sexes, sexual development and response, genetics, pregnancy, childbirth, reproductive issues & advances in assisted reproductive technologies which include contraceptive methods, infertility, impotency and sexually-transmitted diseases. Open to both male and female students, meant for non-science majors. (Prerequisite(s): READ 0721 with a grade of “C” or better or appropriate assessment score) (MnTC: Goals 3 & 9) 3C/3/0/0

BIOL 1790 Special Topics in Biology

This course is designed to present additional or unique material and learning experiences within a specified discipline. The course will be based on student need, flexibility, and may be designed to meet various transfer and pre-major course requirements. Please see a current Course Schedule for complete details. (MnTC: Goal 3) Variable credits 1-6

BIOL 2721 Human Anatomy and Physiology 1

This course covers body organization, tissues, human body systems (integumentary, skeletal, muscular and nervous), and the special senses, integrating both the anatomy and physiology of each organ system. Dysfunctions may be included, but the body in homeostasis is emphasized. Two hours of lab per week are required. Some lab activities involve the dissection of preserved animal organs. Traditional and hybrid sections are available. (Prerequisite(s): BIOL 1740 General Biology 1: The Living Cell with a grade of “C” or better) (MnTC: Goal 3) 4C/3/1/0

BIOL 2722 Human Anatomy and Physiology 2

This course covers those body systems not included in Human Anatomy & Physiology 1: cardiovascular, respiratory, reproductive, urinary, endocrine, digestive, and lymphatic/immune systems. The anatomy and physiology of each organ system is integrated. Dysfunctions may be included, but the body in homeostasis is emphasized. Two hours of lab per week are required. Many lab activities involve dissection of a preserved animal and animal organs. Human cadavers are also studied for two hours. (Prerequisite(s): BIOL 2721 Human Anatomy and Physiology 1 with a grade of “C” or better) Traditional and hybrid sections are available. (MnTC: Goal 3) 4C/3/1/0

BIOL 2750 General Microbiology

General Microbiology covers bacteria, fungi, protozoa, algae, and viruses. Structure, metabolism, growth requirements, genetics, and replication of these microbes will be compared. Emphasis will be placed on the role of microbes in human disease and the function of the immune system in microbial control and balance. Environment and industrial microbiology will also be discussed. Three hours of lab per week are required and sessions will be structured to provide a hands-on introduction to common laboratory techniques related to topics covered in lecture. Safety and infection control will also be stressed. (Prerequisite(s): BIOL 1740 General Biology 1: The Living Cell with a grade of “C” or better) Traditional and hybrid sections are available. (MnTC: Goal 3) 4C/3/1/0

BIOL 2755 Genetics

Traditional and modern principles of genetics will be investigated through problem solving, molecular modeling and group discussion. The course will include exploration of genetics at the cellular and organismal level with special emphasis on human genetics. Students will have the opportunity to design and present research using genetic laboratory techniques. (Prerequisite(s): BIOL 1740) 4C/3/1/0

BIOL 2760 Cell and Molecular Biology

This course is designed for Saint Paul College students interested in Biomedical or Biotechnology sciences as part of their core curriculum. It is also open to any student interested in the fields of cell biology and molecular genetics. Through laboratory investigations, students will learn the current concepts and techniques in molecular biology for a better understanding of the cell. Students will also learn the use of National Center for Biotechnology Information (NCBI) website for the analysis of genetic sequence and applying their findings to the treatments and cure of human disease, agricultural improvement, forensic science and a better understanding of evolution. Ethical and moral issues posed by molecular biotechnology will be explored and discussed. (Prerequisite(s): BIOL 2750 General Microbiology with a grade of “C” or better) (MnTC: Goal 3) 5C/4/1/0

BIOL 2770 Biology Internship

This course provides students with an opportunity to design and carry out a science research project under the supervision of a faculty advisor. The research report will be prepared using literature review, problem identification, procedural documentation, data collection, data analysis, findings, conclusions, and recommendations. Evaluation will be carried out by faculty teams and experts in the field. The course will also provide an opportunity for field study in an approved internship setting. (Prerequisite(s): Instructor approval) (MnTC: Goal 3) Variable credits 1-4