

BIOL 2035 Introduction to Environmental Sciences (3,3,0) (E)

Prerequisite: BIOL 1005 Introduction to Biology

This course aims to introduce to students the scientific principles and issues in environmental sciences. It is a combination of scientific evidence and technical appraisals of processes and problems in relation to environmental quality. The topics selected will demonstrate how environmental issues are related to our everyday life. By showing how environmental and resource problems are interrelated, students should be able to understand the concepts and apply the principles to solve environmental and resource problems.

BIOL 2110 Ecology (3,3,0) (E)Prerequisite: *For Biology students:* BIOL 1130 Biodiversity and BIOL 1310 Microbiology

This course emphasizes biological functioning at the levels of population, community, and ecosystem, and is organized around the principles of energy flow and nutrient cycles. Human interventions such as urbanization, harvesting renewable and non-renewable resources, and pollution generation are considered in relation to natural limits, natural regulations and regeneration mechanisms, and long-term ecosystem stability.

BIOL 2120 Ecology Laboratory (1,0,3)

Co-requisite: BIOL 2110 Ecology

This course aims to develop students' competence in modern methods of ecological research and environmental assessment, to utilize appropriate experimental techniques and to collect and interpret data. Ecological projects of local relevance will be emphasized.

BIOL 2160 Genetics and Evolution (3,3,0) (E)

Prerequisite: BIOL 1160 Biological Chemistry and BIOL 1210 Cell Biology

This course provides a general understanding of the structure, expression, regulation and mutation of genes. Various patterns and processes involved in the transmission of inheritable characteristics are introduced. Contributions of population genetics to the study of evolution, concepts of evolutionary genetics, and the recent hypothesis of molecular evolution are compared and discussed.

BIOL 2170 Genetics and Evolution Laboratory (1,0,3)

Co-requisite: BIOL 2160 Genetics and Evolution

This laboratory exercise exposes students to basic tools and techniques used in the study of genetics. Various organisms are used in the laboratory to enhance the understanding of genetic theories and principles.

BIOL 2210 Animal Physiology (3,3,0) (E)

Prerequisite: BIOL 1130 Biodiversity and BIOL 1210 Cell Biology

This course aims to provide a fundamental knowledge on the basic principles and the interrelation between the anatomical and functional organization of animal body. Regulatory mechanisms that cause the functional systems to operate in homeostasis are discussed. Emphasis throughout is placed on the human physiology. Comparative physiology of lower animals is also introduced. Students will come to understand the major physiological systems involved in the maintenance of body functions.

BIOL 2220 Animal Physiology Laboratory (1,0,3)

Co-requisite: BIOL 2210 Animal Physiology

This course (1) provides students with practical experience of applying important physiological concepts in animal physiology, (2) illustrates some basic but important physiological concepts by means of experiments, and (3) provides an opportunity to practise the methods and utilize the apparatus most frequently used in experimental physiology.

BIOL 2230 Plant Physiology (3,3,0) (E)

Prerequisite: BIOL 1130 Biodiversity and BIOL 1210 Cell Biology

This course deals with the plant physiological processes such as plant water relations, plant nutrition, photosynthesis, translocation, plant hormones and their roles during plant growth and development, plant morphogenesis and the control of flowering. Students are expected to use physiological principles to explain many plant performances, which are required in the applied aspects of plant sciences, such as horticulture and agronomy.

BIOL 2240 Plant Physiology Laboratory (1,0,3)

Co-requisite: BIOL 2230 Plant Physiology

This laboratory exercise is designed to provide students with laboratory experience related to the materials covered in the lectures. Students will be exposed to basic techniques in investigating plant functions and data interpretation. Computer-based statistical analysis and graphical interpretation will be introduced.

BIOL 3005 Animal Physiology (3,3,0) (E)

Prerequisite: Biology major Year III/IV standing

This course aims to provide students with the fundamental knowledge on the basic principles and the interrelation between the anatomical and functional organization of animal body. Regulatory mechanisms that cause the functional systems to operate in homeostasis are discussed. Throughout the course, emphasis is placed on human physiology. Comparative physiology of lower animals is also introduced. Students will come to understand the major physiological systems involved in the maintenance of body functions.

BIOL 3006 Animal Physiology Laboratory (1,0,3)

Prerequisite: Biology major Year III/IV standing

This course provides students with practical experience of applying important physiological concepts in Animal Physiology. Some basic but important physiological concepts are illustrated by means of experiments. It also provides an opportunity for students to practise the methods and utilize the apparatus most frequently used in experimental physiology.

BIOL 3007 Ecology (3,3,0) (E)

Prerequisite: Biology major Year III/IV standing

This course places emphasis on biological functioning at the levels of population, community, and ecosystem, and is organized around the principles of energy flow and nutrient cycles. Human interventions such as urbanization, harvesting renewable and non-renewable resources, and pollution generation are considered in relation to natural limits, natural regulations and regeneration mechanisms, and long-term ecosystem stability.

BIOL 3015 Ecology Laboratory (1,0,3)

Prerequisite: Biology major Year III/IV standing

This course aims to use local ecological topics to facilitate the students' learning of modern methods of ecological research and environmental assessment, utilization of appropriate experimental techniques, collecting and interpreting data, and writing of ecological reports.

BIOL 3016 Environmental Health and Toxicology (3,3,0) (E)

Prerequisite: Biology major Year III/IV standing

The course provides the general knowledge on the various routes of human exposure to toxic chemicals. Main emphasis will be placed on the biological responses to toxicants, methods for evaluating potential toxicity and applications of toxicological data to assess potential health risk.

BIOL 3017 Molecular Biology (3,3,0) (E)

Prerequisite: Biology major Year III/IV standing

This course aims to provide a solid foundation in describing the molecular and cellular mechanisms in the maintenance and the