

BIOLOGY (BIO) - ROCK COUNTY

Courses

BIO 101 CONCEPTS OF BIOLOGY 4 Units

An introduction to the fundamental principles of living organisms. Includes cell and tissue structure, growth, basic physiological processes, reproduction and inheritance, classification, evolution and ecology.

BIO 105 MEDICAL TERMINOLOGY 1 Units

This course is designed to acquaint students of science, health science, and other majors with the origins and applications of the technical terms they are likely to encounter.

BIO 121 FOUNDATIONS OF BIOLOGICAL SCIENCES I 5 Units

First semester of a two semester course designed for majors in biological sciences. Topics include: biological chemistry, cell structure and function, cellular metabolism (enzymes, respiration, photosynthesis), information flow (DNA, RNA, protein), principles of genetics, and survey of viruses, prokaryotes, and protists.

BIO 122 FOUNDATIONS OF BIOLOGICAL SCIENCES II 5 Units

Second semester of a two semester sequence designed for majors in biological sciences. Follows BIO 121. Topics include: speciation and evolutionary theory, survey of the eukaryotes after the protists, selected topics in plant and animal physiology, and ecology at multiple levels of the biological hierarchy.

PREREQ: BIO 121

BIO 141 HEREDITY 3 Units

Principles of heredity with applications to plant, animal and human inheritance; current advances in genetics and their bearing on the life sciences. Lecture and may also include demonstrations, discussion and field trips.

BIO 180 INTRODUCTION TO HUMAN BIOLOGY 3 Units

Introduction to the development, nature, and processes of human adaptability. This course will cover major topics in biology and how they relate to humans at all levels from the bottom up. Special emphasis will be given to human health, human evolution and relationships to the environment. The course includes topics in cells and tissues, organ systems, immunology/ microbiology, genetics, evolution, and ecology. Lecture and may also include demonstrations, discussion and field trips.

BIO 184 BIOLOGY OF HUMAN SEXUALITY AND REPRODUCTION 3 Units

This course focuses on the biological aspects of human sexuality and reproduction. In addition, the following topics will be discussed from a biological perspective: birth control, sexually transmitted diseases, birth defects, abortion, differences between the sexes, and the manipulation of the human reproductive process by science. Lecture and may also include demonstrations, discussion and field trips.

BIO 185 BIOLOGY FOR NURSING AND ALLIED HEALTH PROFESSIONS 3 Units

This course is designed to acquaint students pursuing select careers in health sciences with the fundamental principles of living organisms. Includes an introduction to cells and tissues, organ systems, growth, basic physiological processes, metabolism, reproduction and inheritance.

BIO 186 BIOLOGY OF WOMEN 3 Units

An introduction to the physiology and reproductive anatomy of women including pregnancy, human development, cancer, infertility, birth control, sexually transmitted diseases and other health issues.

BIO 190 INTRODUCTION TO ENVIRONMENTAL SCIENCE 3 Units

Principles underlying the proper management of our resources: water, soils, minerals, forests, wildlife, human. Current and past attitudes relating to the resources with the interaction and complexities of humans' interests. This meets the statutory requirement for Conservation of Natural Resources required for State certification for teachers of Science, Social Sciences. Lecture and may include demonstrations, discussions, and field trips.

BIO 191 ENVIRONMENTAL SCIENCE 4 Units

Contemporary study of natural world through human perspective. Emphasis on humans as modifying force in the biophysical environment, including selected topics in ecological principles, pollution, population biology, environmental management. Course meets the statutory requirement for Conservation of Natural Resources required for State certification for teachers of science and social sciences. Lecture, lab. May include demonstrations, discussions, and field trips.

BIO 193 NATURAL HISTORY OF WISCONSIN 3 Units

Natural History of Wisconsin is an introductory course intended for those wanting to learn more about Wisconsin's diverse plant and animal life. The main focus of this course is Wisconsin's diversity of plants and animals and the ecosystems in which they live. In addition, it may cover basic concepts of field ecology, behavior, conservation, identification of select organisms, and a review of the historical contributions to Wisconsin natural history. This course is designed to increase the awareness and appreciation of Wisconsin's biological diversity at a time when the general public is increasingly disconnected from natural environments. May include field trips.

BIO 211 GENETICS 4 Units

Laws of variation and heredity and their modification by the environment, genetic engineering, and chromosome behavior with emphasis on human genetics. Lecture, lab, and may also include demonstrations, discussion and field trips.

PREREQ: (C OR BETTER IN BIO 121 OR BIO 122) AND CHE 145

BIO 251 GENERAL SURVEY OF MICROBIOLOGY 5 Units

Survey of micro-organisms and their activities: emphasis on structure, taxonomy, function, ecology, nutrition, physiology, pathology, and genetics. Survey of applied microbiology: agricultural, medical, industrial, environment and food. The lab is an introduction to standard techniques and procedures in general microbiology. Lecture, lab, and may also include demonstrations, discussion and field trips.

PREREQ: C OR BETTER IN: (BIO 101 OR BIO 121). CHE 125 STRONGLY RECOMMENDED, BUT NOT REQUIRED.

BIO 277 ORNITHOLOGY 3 Units

A course that introduces the student to the biology of birds, methods of modern field studies, identification, classification, life histories, ecology, and behavior of birds, with emphasis on local species. Lecture and lab, with required field trips.

PREREQ: BIO 101 OR BIO 121

BIO 285 ANATOMY AND PHYSIOLOGY 4 Units

An examination of the structure and function of the human body at the molecular, cellular, tissue, organ, and system levels of organization. The integration of these levels of organization within the human organism is emphasized. This is the first semester of a two-semester sequence. Lecture, lab, and may also include demonstrations, discussion and field trips.

PREREQ: C OR BETTER IN (BIO 101 OR BIO 121)

BIO 286 ANATOMY AND PHYSIOLOGY 4 Units

An examination of the structure and function of the human body at the molecular, cellular, tissue, organ, and system levels of organization. The integration of these levels of organization within the human organism is emphasized. This is the second semester of a two-semester sequence. Lecture, lab, and may also include demonstrations, discussion and field trips.

PREREQ: C OR BETTER IN BIO 285

BIO 299 READING AND RESEARCH IN BIOLOGY *Repeatable* 1-3 Units

(Previously BAC 299/BOT 299/ZOO 299) Supervised undergraduate reading & research in biological Sci.s. This course is designed to acquaint the undergraduate with the Lit. & research techniques used in biological investigation & to give practical experience in scientific problem-solving.

PREREQ: CONSENT OF INSTRUCTOR

BIO 300 SURVEY OF CURRENT TOPICS IN HUMAN HEALTH AND DISEASE 3 Units

A general introduction to the process of science for students who may not have previously taken another college science course. Basic scientific concepts including scientific method and ethics in scientific studies are covered followed by a focus on topics of current relevance to human health and disease, including mental health, infectious disease, and environmental health.

PREREQ: ENG 102 AND MAT 105 UNREQ: A STUDENT MAY ONLY EARN CREDIT FOR ONE OF THE FOLLOWING: (BIO 300 AND BIO 304) OR BIO 302

BIO 302 CURRENT TOPICS IN HUMAN HEALTH AND DISEASE 4 Units

A general introduction to the process of science for students who may not have previously taken another college science course. Basic scientific concepts including scientific method and ethics in scientific studies are covered followed by a focus on topics of current relevance to human health and disease, including mental health, infectious disease, and environmental health. The laboratory component of the class focuses on critical thinking in a scientific context. Students will develop skills in reading and researching scientific literature and conducting basic statistical analyses using spreadsheet software.

PREREQ: ENG 102 AND MAT 105 UNREQ: A STUDENT MAY ONLY EARN CREDIT FOR ONE OF THE FOLLOWING: (BIO 300 AND BIO 304) OR BIO 302

BIO 304 CURRENT TOPICS IN HUMAN HEALTH AND DISEASE LAB 1 Units

This laboratory focuses on critical thinking in a scientific context. Students will develop skills in reading and researching scientific literature and conducting basic statistical analyses using spreadsheet software.

PREREQ: ENG 102 AND MAT 105 UNREQ: A STUDENT MAY ONLY EARN CREDIT FOR ONE OF THE FOLLOWING: (BIO 300 AND BIO 304) OR BIO 302

BIO 305 ENVIRONMENTAL MICROBIOLOGY 3 Units

This is a course that examines the roles of bacteria and other microorganisms in the environment. Topics will include an introduction to the main groups of microorganisms and their physiology, soil microbiology, cycles of elements, aquatic microbiology, sewage treatment, bioremediation, and biotechnology.

PREREQ: BIO 101 OR BIO 191 OR BIO 121

BIO 310 PATHOPHYSIOLOGY 3 Units

This is an introductory course in pathology for nursing majors. This course will provide an understanding of the clinical signs and symptoms of disease and will prepare students for the patients often encountered in clinical practice. Topics covered by this course include: general pathology concepts and pathogenesis of diseases common to all organ systems, the processes of cellular adaptation, inflammation, repair, immunology, cellular accumulation, and neoplasia.

PREREQ: (C OR BETTER IN (BIO 251 AND BIO 285) OR (BIO 285 AND BIO 286))

BIO 398 SPECIAL TOPICS: THE ECOLOGY OF FOOD PRODUCTION 3 Units

This course will comprise a focused exploration of the environmental impact of industrialized agricultural systems. In addition to examining the history and practice of food production and global distribution, we will explore the impacts of current industrialized agricultural practices on the environment. This course will also explore food systems, food security, sustainable agricultural practices and alternative food sources. Because the study of environmental impact is both global and interdisciplinary, this course will introduce the social, political, ethical, and economic forces that relate to farming practices, global food distribution, and consumption.

PREREQ: JUNIOR STANDING OR CONSENT OF INSTRUCTOR