

have a comprehensive knowledge of the current and projected legislation regarding waste and their potential implications.

BIOL 3320 Immunology (3,3,0) (E)

Prerequisite: BIOL 1210 Cell Biology, BIOL 2160 Genetics and Evolution and BIOL 2210 Animal Physiology

This course provides basic concepts in the rapidly advancing field of immunology and exposes students to modern and current applications of immunology in cell biology, molecular biology and medical sciences.

BIOL 3350 Neurobiology (3,3,0) (E)

Prerequisite: BIOL 2210 Animal Physiology

The course studies neurobiology with main emphasis on how neuronal information are integrated in the CNS to control functions such as visual recognition, sleep, memory and movement. The course also studies the autonomic nervous system with emphasis on its control of body functions. Lastly, the relationship between the nervous system and the hormonal system will also be stressed.

BIOL 3380 Environmental Science Laboratory I (2,0,6)

Prerequisite: BIOL 2110 Ecology and Biology major Year III standing (Environmental Concentration); or BIOL 2110 Ecology and Geography major Year III standing

This course provides students with hands-on experience in the approach and techniques commonly used in environmental research. A local habitat will be selected and students will be trained the sampling and analytical techniques for various environmental matrices including water, soil and biological samples.

BIOL 3390 Environmental Science Laboratory II (2,0,6)

Prerequisite: Biology major Year III standing (Environmental Concentration)

This laboratory exercise provides students with training in analytical techniques, including physical, chemical and biological techniques, for environmental investigations, and with the skills in management and evaluation of environmental data, and with hands-on experience in management techniques for conducting and evaluating an environmental project.

BIOL 3440 Plant Propagation and Breeding (3,3,0) (E)

Prerequisite: BIOL 1130 Biodiversity and BIOL 2230 Plant Physiology

This course is divided into two main sections, plant propagation and plant breeding. Students are expected to understand the principles involved in the practices of the two important aspects of applied plant sciences. Both conventional and modern methods, and technology are introduced with emphasis on the plant micropropagation and conventional hybridization breeding.

BIOL 3460 Biotechnology Studies Laboratory I (2,0,6)

Prerequisite: Biology major Year III standing (Biotechnology Concentration)

This laboratory exercise introduces basic principles and current methods in biotechnology. The topics cover the basic technologies in molecular biology, enzymology and immunology.

BIOL 3470 Biotechnology Studies Laboratory II (2,0,6)

Prerequisite: Biology major Year III standing (Biotechnology Concentration)

This laboratory exercise introduces basic principles and current methods in biotechnology. The topics cover various techniques currently being used in the area of immunology, plant science, production of microbial products, neurobiology and physiology.

BIOL 3591-2 Applied Biology Project I & II (3,0,9)

Prerequisite: Biology major Year III standing

This course aims to guide students in the development of research methodology appropriate to the practice of biology. Opportunity will be given to students who work on problems of an applied or interdisciplinary nature that have real-world significance.

BIOL 4005 Biotechnology Studies Laboratory I (2,0,6)

Prerequisite: Biology major Year IV standing (Biotechnology Concentration)

The course is to introduce basic principles and current methods in biotechnology. The topics cover the basic technologies in molecular biology, enzymology and immunology.

BIOL 4006 Environmental Science Laboratory I (2,0,6)

Prerequisite: Biology major Year IV standing (Environmental Concentration)

This course provides students with hands-on experience in the approaches and techniques commonly used in environmental research. A local habitat will be selected and students will be trained the sampling and analytical techniques of various environmental matrices including water, soil and biological samples.

BIOL 4007 Molecular Biotechnology I (3,3,0) (E)

Prerequisite: Biology major Year IV standing

This course aims to introduce to students fundamental principle and current techniques in molecular biology with particular emphasis on biotechnology applications. The recombinant DNA technology in protein engineering will be emphasized.

BIOL 4015 Fermentation and Enzyme Technology (3,3,0) (E)

Prerequisite: Biology major Year IV standing

This course aims to introduce basic principles and current techniques in industrial microbiology and enzyme technology.

BIOL 4016 Principles of Environmental Management (3,3,0) (E)

Prerequisite: Biology major Year IV standing

This course aims to (1) discuss the anthropogenic causes of environmental degradation and the way sustainable growth can be brought about by environmental management; (2) examine the framework of environmental planning and management and the techniques for tackling environmental management; and (3) apply principles of environmental science to help manage some of the diverse array of environmental problems, in different physical, biological and social environments.

BIOL 4017 Environmental Biotechnology (3,3,0) (E)

Prerequisite: Biology major Year IV standing

This course provides a general understanding of the principles and applications of biotechnology in environmental monitoring, pollution control and contaminants removal. Special emphasis will be placed in biological wastewater treatment, bioremediation and ecological engineering.

BIOL 4025 Biotechnology Studies Laboratory II (2,0,6)

Prerequisite: Biology major Year IV standing (Biotechnology Concentration)

This course introduces basic principles and current methods in biotechnology. The topics cover various techniques currently in use in immunology, plant science, production of microbial products, neurobiology, and physiology.

BIOL 4026 Environmental Science Laboratory II (1,0,3)

Prerequisite: Biology major Year IV standing (Environmental Concentration)

This course aims to (1) provide students with training in analytical techniques, including physical, chemical and biological techniques,

for environmental investigations; (2) provide students with the skills in management and evaluation of environmental data; and (3) provide students with hands-on experience in management techniques for conducting and evaluating an environmental project.

BIOL 4027 Molecular Biotechnology II (3,3,0) (E)

Prerequisite: Biology major Year IV standing

This course aims to cover the fundamental principles and current techniques in molecular biology with particular emphasis on the application of biotechnology in animal science, plant science and medicine.

BIOL 4035 Biological Resources and Management (3,3,0) (E)

Prerequisite: Biology major Year IV standing

This course is designed to promote an awareness of human beings' interaction with the abiotic and biotic environments through studying the principles of resource utilization and conservation that apply to biological systems. The course focuses on the management and rational exploitation of resources in terrestrial and aquatic ecosystems with particular emphasis on local and regional resources.

BIOL 4898-9 Applied Biology Project I & II (3,0,9)

Prerequisite: Biology major Year IV standing

This course aims to provide students with opportunities to conduct a literature survey or laboratory-based research on a specific biological question. Guidance will be provided to students in the development of an independent research plan and apply this plan to address the question.

BIOL 7010 Advanced Topics in Biotechnology (3,3,0)

Prerequisite: BSc (Hons) in Biology or with consent of instructor

This is a postgraduate course covering the principles and methods of biotechnology at an advanced level. It aims at providing more in-depth studies of selected topics, such as production of recombinant proteins, toxicological study of drugs, application of immunological techniques in research, and new developments of modern biotechnology.

BIOL 7020 Advanced Topics in Environmental Sciences (3,3,0)

Prerequisite: BSc (Hons) in Biology or with consent of instructor

This is a postgraduate course that provides update information in recent advance development in selected areas in environmental science and technology.

BMS 1230 Molecular Biology (1,1,0) (E)

An introduction to the basic concepts of gene expression, regulation and manipulation. Students will expose to few common techniques used by molecular biologists, with special emphasis on the applications in medicine. A one-credit hour laboratory course (BMS1240) is coupled with the lecture. Students will have hands-on experience of various tools and techniques for analysis of recombinant DNA. Daily life issues related.

BMS 1240 Molecular Biology—Laboratory (1,0,3)

To provide students the different methodologies in manipulation and detection, and where applicable.

BMS 1260 Medical Psychology (2,2,0) (E)

This course aims at providing students with basic knowledge about the theories and concepts in medical psychology, developing their ability to apply psychological explanations to individual's daily social behaviour, and examining current psychological issues related to people in Hong Kong.

BMS 1350 General Pathology (3,3,0) (E)

Pathology is a subject about structural changes and functional disturbances in tissues and organs of the body caused by diseases. It is a mandatory course to link between basic and clinical medical sciences. Students will be introduced to the basis of histopathology and pathophysiology, and learn the fundamental mechanisms, morphological changes, as well as physiological impacts of commonly seen diseases. General pathology that deals with common and basic pathological changes will be taught here to lay foundation for systemic pathology where individual diseases will be taught in each organ-system in Clinical Medicines. The knowledge will be re-enforced by practical sessions. The students' learning and analytical ability will be enhanced by means of case studies, and examination of gross and microscopic specimens. Problem-based learning is implemented whenever possible after the students have been equipped with the basic knowledge, and students are encouraged to address some questions by themselves analytically.

BMS 1370 Pharmacology (3,3,0) (E)

This course aims to provide students with fundamental knowledge on the use of xenobiotics as orthodox Western drugs in the treatment of human diseases. In the beginning of the course, the important principles of pharmacology will be introduced. This is followed by a series of topics on the therapeutic approach in tackling inflammation and pain management. Subsequently, a systematic coverage on the mechanisms of action of drugs that on various organ systems will be covered, from different components of the nervous system to the cardiovascular and renal systems. The last section of the course is on chemotherapeutic agents, ranging from the use of antibiotics to the different classes of anti-tumor drugs. In addition, students also have the opportunity to participate in a semester-end group presentation on approved topics relevant to pharmacology. By the end of the course, students are expected to acquire essential knowledge on the classes and clinical uses of different drugs currently commonly used in Hong Kong, plus a general idea about toxicology.

BMS 1380 Fundamental Diagnosis (4,4,0) (E)

This course aims at teaching students how to apply the knowledge of basic medical science to clinical practice. The basic techniques of history taking, doing a thorough physical examination of the body and writing out a comprehensive and precise medical record are taught. Students will learn how to make a preliminary diagnosis and list out differential diagnoses. Investigative procedures and interpretation of their results will be introduced. They will also learn how to utilize these ancillary investigations to help them confirm their preliminary diagnoses. Ample examples of the investigations will be shown, e.g. ECG of a patient with myocardial infarction, normal X rays of different parts of the body and X rays of diseased states, CT's, MRI's, and isotopic scans of common conditions. Applications and indications for these investigations will also be explained.

BMS 1460 Pre-clinical Sciences Lab (1,0,3)

The laboratory sessions cover Microbiology and Pathology. Through these practices, the concepts regarding pathogenesis and manifestations taught in lectures demonstrated and enhanced by case studies and hand-on experiences, and some common skills in medicine and scientific research will be learnt.

BMS 1490 Clinical Sciences Lab (1,0,3)

This laboratory course aims to provide students with a practical experience in pharmacology. Students will be enriched to have a better picture of the concepts acquired from the pharmacology lecture course BMSC 2017 by participation in a series of experimental sessions involving animal studies and general pharmacological lab techniques. Besides, demonstrations on fundamental medical diagnosis will also be provided in this lab course.