

Biology

Biology Stream

Course List

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BIO 2110	Cellular Biochemistry	3
BIO 2112	Cellular Biochemistry Laboratory	2
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BIO 2122	Cell Biology Laboratory	2
BIO 2210	Ecology	3
BIO 2212	Ecology Laboratory	2
BIO 2310	General and Molecular Genetics	3
BIO 2312	General and Molecular Genetics Laboratory	2
BIO 2910	Biological Research and Communication Skills	1
BIO 3310	Human Biology	3
BIO 3312	Human Biology Laboratory	2
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BIO 3530	Plant Physiology	3
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BIO 3630	Animal Physiology	3
BIO 3632	Animal Physiology Laboratory	2
BIO 3652	Animal Biology Laboratory	2
BIO 3710	Marine Biology	3
BIO 3712	Marine Biology Laboratory	2
BIO 4010	Evolutionary Biology	3
BIO 4120	Developmental Biology	3
BIO 4122	Developmental Biology Laboratory	2
BIO 4210	Environmental Pollution and Toxicology	3
BIO 4212	Environmental Pollution and Toxicology Laboratory	2
BIO 4220	Environmental Biotechnology	3
BIO 4222	Environmental Biotechnology Laboratory	2
BIO 4310	Human Genetics	3
BIO 4320	Molecular Biology and Genetic Engineering	3
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Course Description

BIO 0100

Fundamentals of Life

1 U; 1 STOT; 1st term

This course is designed for first-year Biology students without HKALE "Biology". The lack of basic knowledge in specific fields of biology of the students will be identified. Appropriate reading materials will be assigned for individual students for presentation and discussion in class.

BIO 0430/0440

Literature Senior Seminar I/II

1/2 U; 1/2 STOT; 2-term

In this course, students will review the literature on selected topics under the supervision of a faculty member. The literature search should begin during the summer vacation preceding the final year of attendance. Students are required to discuss their progress with their supervisors. The requirements include a written report in the first term and a seminar presentation in the second term.

BIO 0431/0451

Experimental Senior Seminar I/II

3/3 U; 3 STOT; 2-term

In this course, students will undertake a research project (either laboratory or field investigation) under the supervision of a faculty member. Research work should begin during the summer vacation preceding the final year of attendance. Students are required to submit a research proposal and a progress report in the first term. In the second term, students will continue to work on their research project and discuss their research data with their supervisors. The results of the research project will be presented in the form of an oral presentation and a written report.

BIO 2010

Diversity of Life

3 U; 3 Lect.; 1st term

This course will cover the main features of the following major groups of organisms, their life histories and adaptations. 1) Microorganisms - viruses, bacteria and fungi; 2) non-flowering plants - algae, mosses, ferns and gymnosperms; 3) flowering plants - dicotyledonous and monocotyledonous plants; 4) invertebrates - protozoans, coelenterates, platyhelminthes, molluscs, annelids, arthropods and echinoderms; and 5) vertebrates - fishes, amphibians, reptiles, birds and mammals. (Not for Biology Majors.)

BIO 2012

Diversity of Life Laboratory

2 U; 1 Tut. 3 Lab.; 1st term

To accompany BIO 2010. Corequisite: BIO 2010. (Not for Biology Majors.)

BIO 2110

Cellular Biochemistry

3 U; 3 Lect.; 1st term

This course is mainly designed for Biology students who have very little or no knowledge of biochemical aspects in metabolism. Topics include the survey of the biochemical activities of cells; how cells supply themselves with energy; regulation and compartmentalization of these metabolic activities in different cell organelles will also be covered. (Not for Biochemistry Majors.)

BIO 2112

Cellular Biochemistry Laboratory

2 U; 1 Tut. 3 Lab.; 1st term

To accompany BIO 2110. Corequisite: BIO 2110. (Not for Biochemistry Majors.)

BIO 2120

Cell Biology

3 U; 3 Lect.; 2nd term

This course introduces students to the cell as the basic structural and functional unit of living organism and to the main method of cellular study. The structural and physiological characteristics of animal and plant cells, as well as their main organelles, are considered. An integrated approach to the structural and functional relationships in cellular processes will be emphasized.

BIO 2122

Cell Biology Laboratory

2 U; 1 Tut. 3 Lab.; 2nd term

To accompany BIO 2120; tutorial classes are included. Corequisite: BIO 2120.

BIO 2210

Ecology

3 U; 3 Lect.; 1st term

This course deals with the general principles of ecology which apply to both plants and animals. It includes a general analysis of the physical, chemical and biological environmental factors and their relation to organisms; population development; intraspecific and interspecific relations; communities and community types, with an introduction to biogeography. The significance of ecology is stressed in its application to modern environmental problems.

BIO 2212

Ecology Laboratory

2 U; 1 Tut. 3 Lab.; 1st term

To accompany BIO 2210. Corequisite: BIO 2210.

BIO 2310

General and Molecular Genetics

3 U; 3 Lect.; 2nd term

This course offers to study how genetic characteristics of living organisms are inherited from one generation to the next. The nature, organization, replication and expression of the genetic material are considered. Mutation, selection and evolution of the genes and interaction with the environment are included. The basic recombinant DNA techniques for gene manipulation are also described.

BIO 2312

General and Molecular Genetics Laboratory

2 U; 1 Tut. 3 Lab.; 2nd term

Laboratory work is devoted to the genetic studies of bacteria, yeast, fungi and *Drosophila*. Mutagenesis of bacteria and yeast by ultraviolet, chemical and biological methods and subsequent genetic mapping are included to demonstrate the fundamental principles of genetics. Corequisite: BIO 2310.

BIO 2910

Biological Research and Communication Skills

1 U; 1 Lect; 2nd term

This course will prepare the beginning Biology students with basic skills in biological research, including an introductory treatment of the scientific method of investigation, hypothesis formulation and testing, design of experiments, data interpretation, statistical analysis, searching biological literature and the use of information technology in biological research. Students will also be trained to develop proper communication skills required for modern biological research, including oral presentation skills and the art of scientific writing.

BIO 3310

Human Biology

3 U; 3 Lect.; 2nd term

This course introduces the study of man as a zoological species, through the examination of the extant primates and fossils, biochemical microevolution of mankind and embryonic development. The concept that humans, like all other biological species, exhibit variations will be dealt with. The importance of these variations in adapting to environmental stress will be discussed. Much of this course, therefore, will outline the wide range of adaptive power that humans possess with particular emphasis on the plasticity of human adaptability as a factor contributing to the success of mankind. The final part will treat man as a social animal and discuss the possible future of man in the light of his present activities.

BIO 3312

Human Biology Laboratory

2 U; 1 Tut. 3 Lab.; 2nd term

To accompany BIO 3310. Corequisite: BIO 3310.

BIO 3410

General Microbiology

3 U; 3 Lect.; 1st term

This course will include the following topics: an introduction to microorganisms; morphology, structure and function of prokaryotic and eukaryotic microbial cells; microbiological techniques; microbial growth and nutrition; microbial classification systems; microbial metabolism including central metabolic pathways; bacterial fermentations; metabolic and genetic regulation of enzymes; secondary metabolism; an introduction to selected bacterial groups; enterobacteriaceae, anaerobes; an introduction to viruses; bacteriophages; plasmids.

BIO 3412

General Microbiology Laboratory

2 U; 1 Tut. 3 Lab.; 1st term

To accompany BIO 3410. Corequisite: BIO 3410.

BIO 3530

Plant Physiology

3 U; 3 Lect.; 2nd term

This course considers the functional activity of plants, i.e. the study of the processes involved in plant growth and plant behaviour. It includes an examination of the internal mechanisms by which the plant carries on its many complex synthetic chemical processes and the ways in which these processes are integrated. Physiological processes are also considered in relation to the plants in their natural environment competing with other organisms.

BIO 3532
Plant Physiology Laboratory
2 U; 1 Tut. 3 Lab.; 2nd term
To accompany BIO 3530. Corequisite: BIO 3530.

BIO 3550
Plant Biology
4 U; 4 Lect.; 2nd term
A study of algae, fungi, bryophytes, pteridophytes, gymnosperms and angiosperms with emphasis on their functional morphology, life cycle, evolutionary features and ecological adaptation, this course includes anatomical study on structure and development of selected higher plants. Economic importance of plants will also be discussed.

BIO 3552
Plant Biology Laboratory
2 U; 1 Tut. 3 Lab.; 2nd term
To accompany BIO 3550. Corequisite: BIO 3550.

BIO 3610
Invertebrate Structure and Function
2 U; 2 Lect.; 1st term
The morphology, anatomy, ecology, reproduction and development, life history and phylogenetic relationships of major groups of invertebrates will be examined. The function of organ systems will be discussed with reference to the adaptations in relation to the mode of life of the animal emphasizing local animals and their economic importance.

BIO 3620
Vertebrate Life
2 U; 2 Lect.; 2nd term
The morphology, anatomy, ecology, development and life history and phylogenetic relationships of various groups of vertebrates will be examined. The function of some organ systems will be emphasized with reference to the adaptations, leading to success, in relation to the mode of life of the animal.

BIO 3630
Animal Physiology
3 U; 3 Lect.; 1st term
This course considers both generally and with a comparative approach, the different functions of animals such as muscle contraction, nervous conduction, irritability, integration, reproduction, circulation, respiration, excretion, etc., and the maintenance of a stable internal environment. The adaptive and evolutionary changes in the different classes of animals are discussed and compared. (Not for students who have taken FNS 2010.)

BIO 3632
Animal Physiology Laboratory
2 U; 1 Tut. 3 Lab.; 1st term
The laboratory work includes experiments illustrating the phenomena in BIO 3630. Corequisite: BIO 3630.

BIO 3652
Animal Biology Laboratory
2 U; 1 Tut. 3 Lab.; 2nd term
To accompany BIO 3610 and 3620. Corequisite: BIO 3610 and 3620.

BIO 3710

Marine Biology

3 U; 3 Lect.; 1st term

This course gives an introduction to the physical and chemical aspects of the marine environment, and to life in the oceans and coastal waters. The major groups of marine organisms will be treated, with a consideration of the factors influencing their distribution and abundance. Productivity of the marine environment and its present and future utilization by man.

BIO 3712

Marine Biology Laboratory

2 U; 1 Tut. 3 Lab.; 1st term

To accompany BIO 3710. Laboratory and field work (including work on boats) designed to give practical experience in the use of sampling and measuring equipment, fishing methods and diving (optional). Field and laboratory studies of the main habitats. Corequisite: BIO 3710.

BIO 4010

Evolutionary Biology

3 U; 3 Lect.; 2nd term

This course aims to introduce students to recent developments in evolutionary biology with emphasis on theoretical advances. This course will begin with the history of evolutionary ideas, proceed through the genetics of adaptation, natural selection and speciation, and then on to the special topics of molecular evolution, coevolution, evolution of life history strategies and sociobiology, and end with topics on human evolution and social issues and impact.

BIO 4120

Developmental Biology

3 U; 3 Lect.; 1st term

This course deals with the principles and concepts of developmental biology. Lectures include analysis of fundamental embryological processes and consideration of major problems such as determination, cell differentiation, pattern formation, morphogenesis, hormonal and environmental control of development in plants and animals. Selected current topics in developmental biology will also be discussed.

BIO 4122

Developmental Biology Laboratory

2 U; 1 Tut. 3 Lab.; 1st term

To accompany BIO 4120. Corequisite: BIO 4120.

BIO 4210

Environmental Pollution and Toxicology

3 U; 3 Lect.; 2nd term

This course has two parts. The first part introduces the causes, effects and solution of water, land, air and noise pollution. The second part introduces the basic principles and techniques in toxicology, as well as the applications of these principles and techniques in toxicology.

BIO 4212

Environmental Pollution and Toxicology Laboratory

2 U; 1 Tut. 3 Lab.; 2nd term

To accompany BIO 4210. Corequisite: BIO 4210.

BIO 4220

Environmental Biotechnology

3 U; 3 Lect.; 1st term

This course deals with biotechnological principles and techniques and their applications to resolve environmental problems. Underlying principles of biodegradation and biotransformation and basic techniques such as culture collection and cell immobilisation will be introduced. Case studies will be included to lay particular stress on agricultural aspects, waste treatment, and food and energy production.

BIO 4222

Environmental Biotechnology Laboratory

2 U; 1 Tut. 3 Lab.; 1st term

To accompany BIO 4220. Corequisite: BIO 4220.

BIO 4310

Human Genetics

3 U; 3 Lect.; 2nd term

This course considers the principles of genetics which concern with the most interesting organisms - the human being. Topics include Mendelian inheritance, human chromosomes, autosomal and sex-linked inheritance, chromosomal aberrations, human biochemical genetics, genetics of the immune system, behaviour genetics and genetic counselling. Progress in human genetics and practical application will also be discussed.

BIO 4320

Molecular Biology and Genetic Engineering

3 U; 3 Lect.; 1st term

This course considers the structure, function and regulation of genes at the molecular level. Attention will also be directed to the basic concepts and applications of genetic engineering. The latest methods and techniques in molecular biology and genetic engineering will be examined. (Not for students who have taken BCH 4010.)

BIO 4322

Molecular Biology and Genetic Engineering Laboratory

2 U; 1 Tut. 3 Lab.; 1st term

In this laboratory course, gene cloning techniques and the methods involved in the handling of nucleic acids and bacterial viruses will be introduced. Corequisite: BIO 4320.

BIO 4330

Bioinformatics and Proteomics

3 U; 1 Tut. 2 Lect.; 2nd term

Bioinformatics and proteomics are complementary tools that provide a global view of living cells. In this course, we will introduce the principles and methods of bioinformatics and proteomics. First, web-based bioinformatics databases, DNA/protein sequence annotation tools, sequence alignments, protein structure prediction and analysis, and data mining strategies are covered. Second, the flow of information from genome to proteome, protein modification, and protein-protein interactions are discussed. This course also covers protein separation and characterization techniques including two-dimensional electrophoresis, HPLC and mass spectrometry. Prerequisite: BIO 2120 or 2310 or 4320 or equivalent.

BIO 4410

Microbial Biotechnology

3 U; 3 Lect.; 2nd term

This course examines the application of microbial biotechnology to agriculture, industry and medicine. Fundamental topics include applied microbial physiology, genetic manipulation through applied genetics and genetic engineering, industrial fermentation technology and enzyme technology. Examples of applications include microbial production of amino acids, enzymes, foods, chemicals, fuels, pharmaceuticals, biological control agents, etc.

BIO 4510

Hong Kong Flora and Vegetation

3 U; 3 Lect.; 1st term

This course is aimed at familiarizing students with the components of various types of vegetation in Hong Kong, with emphasis on their ecological conditions and their economic applications. This course consists of lectures and independent projects. Prerequisite: BIO 3520 or consent of instructor.

BIO 4512

Hong Kong Flora and Vegetation Laboratory

2 U; 1 Tut. 3 Lab.; 1st term

To accompany BIO 4510 including field observations. Corequisite: BIO 4510.

BIO 4710

Fish Biology and Mariculture

3 U; 3 Lect.; 2nd term

This course deals with the application of biological principles to the culture of marine fishes, crustaceans, molluscs and algae. Emphasis will be placed on the environmental, nutritional, reproductive and endocrine aspects in relation to current maricultural practice. Prerequisite: BIO 3710 or consent of instructor.

BIO 4712

Fish Biology and Mariculture Laboratory

2 U; 1 Tut. 3 Lab.; 2nd term

To accompany BIO 4710. Corequisite: BIO 4710.

Human Biology Stream

The Human Biology Stream is offered in cooperation with the Department of Anatomy and Department of Physiology in the Faculty of Medicine. Basically, the course requirement in the first half of this Stream is identical with that of the regular Biology Stream. In the latter half, students will specialize in other courses described therein.

Course List

<i>Code</i>	<i>Course Title</i>	<i>Unit</i>
BIO 2110	Cellular Biochemistry	3
BIO 2112	Cellular Biochemistry Laboratory	2
BIO 2120	Cell Biology	3
BIO 2122	Cell Biology Laboratory	2
BIO 2210	Ecology	3
BIO 2212	Ecology Laboratory	2

BIO 2310	General and Molecular Genetics	3
BIO 2312	General and Molecular Genetics Laboratory	2
BIO 2910	Biological Research and Communication Skills	1
BIO 3310	Human Biology	3
BIO 3312	Human Biology Laboratory	2
BIO 3410	General Microbiology	3
BIO 3412	General Microbiology Laboratory	2
BIO 4120	Developmental Biology	3
BIO 4122	Developmental Biology Laboratory	2
BIO 4210	Environmental Pollution and Toxicology	3
BIO 4212	Environmental Pollution and Toxicology Laboratory	2
BIO 4310	Human Genetics	3
BIO 4320	Molecular Biology and Genetic Engineering	3
BIO 4322	Molecular Biology and Genetic Engineering Laboratory	2
*MED 3050/3060	Anatomy I/II	3/3
*MED 3051/3061	Anatomy Laboratory I/II	1/1
^Δ MED 3070	Basic Principles of Physiology	3
^Δ MED 3071	Basic Principles of Physiology Laboratory	1
^Δ MED 3080	Physiology of Major Organ Systems in Man	3
^Δ MED 3081	Physiology of Major Organ Systems in Man Laboratory	1
*MED 4550	Specialized Topics in Anatomy	3
^Δ MED 4560	Specialized Topics in Physiology	3
©BMJ 0411	Research Project I	3
©BMJ 0421	Research Project II	3

Course Description

(Please refer to Biology Stream for descriptions of the above courses coded BIO 2110 to 4322.)

MED 3050/3060

Anatomy I/II

3 U; 3 Lect.; 1st/2nd term

This course is designed to provide general information on the structure of the human body in relation to its function. The course or topics will include correlated studies in human topographical anatomy, neuroanatomy, microscopic and human developmental anatomy. Teaching will be by means of lectures, demonstrations and tutorials with emphasis on the functional aspects of anatomy.

MED 3051/3061

Anatomy Laboratory I/II

1 U; 3 Lab.; 1st/2nd term

Practical classes in the relevant areas will include the use of prospected specimens, histological slides and audio-visual aids. Exposure of techniques such as tissue preparation, light and electron microscopy, and tissue culture will also be included in order that students can acquire a broad knowledge of some of the techniques frequently employed in scientific research.

⁺ Courses offered by the Department of Anatomy, Faculty of Medicine.

^Δ Courses offered by the Department of Physiology, Faculty of Medicine.

© Courses jointly offered by the Departments of Biology, Anatomy and Physiology.

MED 3070

Basic Principles of Physiology

3 U; 3 Lect.; 1st term

This course introduces students to the basic principles in physiology and the concept of homeostasis. Topics on cellular basis of physiology, physiology of nerve and muscle cells, physiological control mechanisms, nature and organization of autonomic nervous system, body fluid compartments and blood, will be covered. The study of these fundamental principles is a prerequisite to the study of integrated physiology based on organ systems. Corequisite: MED 3071.

MED 3071

Basic Principles of Physiology Laboratory

1 U; 3 Lab.; 1st term

To accompany MED 3070. Corequisite: MED 3070.

MED 3080

Physiology of Major Organ Systems in Man

3 U; 3 Lect.; 2nd term

This course involves the study of human body functions according to the major organ systems - cardiovascular system, respiratory system, urinary system, nervous system, endocrine and reproductive system. Pathophysiology related to some clinical disturbances will be discussed. Corequisite: MED 3081. Prerequisites: MED 3070 and 3071.

MED 3081

Physiology of Major Organ Systems in Man Laboratory

1 U; 3 Lab.; 2nd term

To accompany MED 3080. Corequisite: MED 3080. Prerequisites: MED 3070 and 3071.

MED 4550

Specialized Topics in Anatomy

3 U; 3 Lect.; 1st term

This course is designed to introduce students to the current research areas undertaken in the Department of Anatomy. The areas include cancer research, embryology, molecular biology and neuroscience. Teaching will be by means of lectures and class discussions plus demonstrations where students will be exposed to advanced research techniques that are relevant to each area of research undertaken. Prerequisites: MED 3050/3060 and 3051/3061.

MED 4560

Specialized Topics in Physiology

3 U; 3 Lect.; 1st term

In this course, more advanced knowledge on research methodology is taught. During the first term this course prepares students to conduct a research project later in the year. It will concentrate on research areas currently pursued in the Department and include membrane transport, sensory physiology, renal and gastrointestinal physiology and nutrition. This course comprises lectures, demonstrations and, where necessary, tutorials. Prerequisites: MED 3070, 3080 and 3071, 3081.

BMJ 0411

Research Project I

3 U; 3 STOT; 1st term

This course is jointly offered by the Departments of Biology, Anatomy and Physiology. Students are required to undertake an in-depth research project under the supervision of a faculty member or members from the Department of Biology, Anatomy or Physiology.

Research work should be started during the summer vacation preceding the final year of attendance. The literature review, design and preliminary results of the research project will be presented as a seminar in early January of the final year of attendance.

BMJ 0421

Research Project II

3 U; 3 STOT; 2nd term

This course is jointly offered by the Departments of Biology, Anatomy and Physiology. Based on the research project designed and developed in BMJ 0411, students will carry out some further research work under their supervisors. The results of the project shall be formally written and submitted in the form of a thesis for assessment at the end of the second term. Prerequisite: BMJ 0411.

Study Scheme

I. Major Programme

Biology Stream

A. Applicable to students admitted in 2002-03 and thereafter

Students are required to complete a minimum of 66 units of courses as follows:

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|--|----------|
| (i) Required Courses: (Please see Notes 1-4): | 38 units |
| (a) BIO 2110/2112, 2120/2122, 2210/2212, 2310/
2312, 2910, 3410/3412, 3550/3552, 3610,
3620, 3652 | |
| (ii) Elective Courses: | 28 units |
| A combination of courses with a minimum of two
laboratory courses from the following:
BIO 0430/0440 or 0431/0451, 3310, 3312, 3530,
3532, 3630, 3632, 3710, 3712, 4010, 4120, 4122,
4210, 4212, 4220, 4222, 4310, 4320, 4322, 4330,
4410, 4510, 4512, 4710, 4712, STA 2101# or MAT
2350#, ENS 4260#, FNS 4180#, 4181#, MBT 4510# | |

Total: 66 units

to be included in the Major GPA as well

Recommended course pattern

<i>First Year of Attendance</i>	21 units
1st term : BIO 2110/2112, 2210/2212	
2nd term : BIO 2120/2122, 2310/2312, 2910	
<i>Second Year of Attendance</i>	25 units
(a) BIO 3410/3412, 3550/3552, 3610, 3620, 3652	
(b) Elective courses from (ii) above: 8 units	
<i>Third Year of Attendance</i>	20 units
Elective courses from (ii) above: 20 units	

Total: 66 units

B. Applicable to students admitted in 2001-02

Students are required to complete a minimum of 66 units of courses as follows:

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|------|---|----------|
| (i) | Required Courses (Please see Notes 1-4):
BIO 2110/2112, 2120/2122, 2210/2212, 2310/2312,
2910, 3410/3412, 3550/3552, 3610, 3620, 3652 | 38 units |
| (ii) | Elective Courses:
A combination of courses with a minimum of two
laboratory courses from the following:
BIO 0430/0440 or 0431/0451, 3310, 3312, 3530,
3532, 3630, 3632, 3710, 3712, 4010, 4120, 4122,
4210, 4212, 4220, 4222, 4310, 4320, 4322, 4330,
4410, 4510, 4512, 4710, 4712, STA 2101# or MAT
2350#, BCH4060#, 4660#, 4130#, 4730#, ENS 4260#,
FNS 4180#, 4181#, MBT 4510# | 28 units |

Total: 66 units

to be included in the Major GPA as well

Recommended course pattern

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|--|----------|
| <i>First Year of Attendance</i> | 21 units |
| 1st term : BIO 2110/2112, 2210/2212 | |
| 2nd term : BIO 2120/2122, 2310/2312, 2910 | |
| <i>Second Year of Attendance</i> | 25 units |
| (a) BIO 3410/3412, 3550/3552, 3610, 3620, 3652 | |
| (b) Elective courses from (ii) above: 8 units | |
| <i>Third Year of Attendance</i> | 20 units |
| Elective courses from (ii) above: 20 units | |

Total: 66 units

Human Biology Stream

Applicable to students admitted in 2001-02 and thereafter

Students are required to complete a minimum of 65 units of courses as follows:

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| (i) | Required Courses (Please see Notes 1 and 2):
BIO 2110/2112, 2120/2122, 2210/2212, 2310/2312,
2910, 3310/3312, 4310, MED 3050#/3051#, 3060#/
3061#, 3070#/3071#, 3080#/3081#, 4550#, 4560#, BMJ
0411#/0421# | 57 units |
| (ii) | Elective Courses:
A combination of courses with a minimum of one
laboratory course from the following:
BIO 3410, 3412, 4120, 4122, 4210, 4212, 4320, 4322,
ENS 4250#, 4252#, STA 2101# | 8 units |

Total: 65 units

to be included in the Major GPA as well

Recommended course pattern

<i>First Year of Attendance</i> BIO2110/2112,2120/2122,2210/2212,2310/2312,2910	21 units
<i>Second Year of Attendance</i> BIO 3310/3312, MED 3050/3051, 3060/3061, 3070/3071, 3080/ 3081	21 units
<i>Third Year of Attendance</i> BIO4310, BMJ0411,0421, MED4550,4560 and two elective courses with at least one laboratory course	23 units
<hr/> Total: 65 units	

- Notes: 1. Students minoring in Biochemistry are exempted from BIO 2110/2112 and should take 5 more units of Biology courses in place of the exempted courses.
2. Students should obtain Grade "D" or above in each of the courses of BIO 2110/2112, 2120/2122, 2210/2212 and 2310/2312. Otherwise, they are required to repeat the courses. Students who cannot meet the Grade "D" requirement in any one of the fundamental courses mentioned above after two attempts will be required to withdraw from the University. Please refer to Reg. 15.2(d) of the General Regulations Governing Full-time Undergraduate Studies.
3. In general, students should complete courses coded 2000 before proceeding to courses coded 3000, and so on. When selecting courses coded 3000 and above, students should pay attention to the prerequisite requirement.
4. Some elective courses in (ii) above are offered in alternate years.

2. Minor Programme

Students are required to complete a minimum of 20 units of Biology courses which should include at least one course with laboratory (5 units) from the following fundamental courses: BIO 2110/2112, 2120/2122, 2210/2212, 2310/2312.

- Notes: 1. Biochemistry Majors should not choose BIO 2110/2112 to fulfil the Minor Programme requirement.
2. Courses which Biochemistry, Environmental Science, Food and Nutritional Sciences, and Molecular Biotechnology Majors take to fulfil their Major requirement cannot be used to fulfil the Minor Programme requirement.

3. Faculty Language Requirement

(Please refer to the "Faculty Language Requirement" of Faculty of Science for details.)