

**BMSC 2005 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 (BMS 1460). 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.

**BMSC 2007 Pre-clinical Sciences Lab (1,0,3)**

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

**BMSC 2015 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.

**BMSC 2016 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.

**BMSC 2017 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.

**BMSC 2025 Microbiology and Immunology (3,3,0) (E)**

Microbiology is the study of microorganisms, which are responsible for much of the breakdown and natural recycling of organic material in the environment. Of the vast number of species of microbes, only a few have the capacity to cause disease by invading the tissues of other living organisms and producing toxic substances. The purpose of this course is to introduce to the students the basic principles and concepts of medical microbiology, the various classes of microorganisms that interact with humans. Other disease-producing multicellular parasites, helminthes and flukes will also be briefly covered in this course.

The following aspects at basic theory and advanced topics are covered: (1) Overview of Microbiology in human perspective; (2) Diversity of Prokaryotic and Eukaryotic organisms; (3) Prokaryotic cell structure and growth; (4) Microorganisms identification; (5) Virus, Viroids and Prions; (6) Bacterial and Viral Pathogenicity; and (7) Helminthes and parasites.

'Immunology' is a basic science about immune system, including immune organs, cells, molecules and clinical relevance involved in immune response. The objective of this course is to give the students a general introduction in immunology and to provide a basis for the advanced clinical course 'Immunology Diseases'.

The following aspects at basic theory and advanced topics are covered (1) Anatomy and principle of the immune system and organs; (2) Cells and molecules of the innate immune system; (3) HLA molecules and antigen presentation; (4) Cell Migration; (5) Cells and molecules of the adaptive immune system; (6) The immune system in concert; (7) Laboratory investigations of the immune system; (8) Disorders in immune system; (9) Immune-based therapies; (10) T cell differentiation and maturation; (11) T cell receptors and T cell activation; (12) B cell differentiation and maturation; (13) B cell receptors and B cell activation; (14) Cytokines; and (15) Cytokine receptors.

**BMSC 2026 Microbiology and Immunology Lab (1,0,3)**

To introduce the fundamental concepts of microbiological and immunological techniques to students taking the course of Chinese medicine. These include: (1) the basic techniques in handling microscopic observation of pathogenic microorganisms; (2) the identification of lymphoid organs, antigen-antibody interactions, generation of humoral and cell-mediated immune responses; and (3) the application of immunological techniques in diagnosis.

**BMSC 3005 Hematology (2,2,0)**

Blood disorders cover a wide spectrum of illnesses ranging from the commonly encountered anemias to rarely seen conditions such as congenital coagulation disorders. Diseases affecting other systems can also affect the hematopoietic functions, making their study an integral part of the assessment of any medical diseases.

The objective of this course therefore aims at giving the students a general overview of hematopoietic functions and diseases affecting these functions. This should be achieved in the following aspects: (a) Composition of blood: plasma & blood cells; physiology of blood, blood cells and clotting; (b) Hematopoiesis: bone marrow structure, stem cell; (c) Clinical manifestations of blood diseases; (d) Investigation of diseases of blood; (e) Anemias; (f) Myeloproliferative disorders; (g) Leukemias; (h) Lymphomas and myeloma; (i) Bleeding disorders; (j) Venous thrombosis; (k) Blood transfusion; and (l) Clinical case studies.

**BMSC 3006 Cardiovascular System (2.5,2.5,0)**

In the modern era, cardiovascular disease contributes greatly to the burden of the healthcare system. In industrialized societies, it is the most frequent cause of adult death. It is important that students should be quite familiar with diseases affecting this system.

This course aims at offering students a general overview of the Cardiovascular System in the following aspects: (1) The gross anatomy of the heart and its great vessels; (2) The physiology of the circulatory system; (3) The cardiovascular system in the diseased state: pathological changes and pathophysiological