

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 (BMSC 2007). 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) (E)**

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) (E)**

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 changes; (4) Clinical manifestations of cardiovascular disorders; (5) History taking and physical examination of the cardiovascular system; (6) Investigative methods of the cardiovascular system; (7) Drugs that affect the cardiovascular system and medications that treat cardiovascular disorders; (8) Overview of the following

common cardiovascular disorders: Heart failure, Ischemic heart diseases, Valvular heart diseases, Hypertensive heart diseases, Congenital heart diseases, Arrhythmias, Myocardial diseases, Pericardial diseases, Endocardial diseases, Pulmonary heart diseases, Diseases of blood vessels; and (9) Study of clinical cases.

**BMSC 3007 Digestive System and Hepatobiliary System (2,5,2,5,0) (E)**

The digestive and hepatobiliary systems are responsible for digestion and absorption of nutrition for all metabolic activities of the body. The liver, apart from taking part in digestion, also participates in a number of important functions. Diseases of these two systems are a major cause of morbidity and mortality.

The objective of this course is to give the students a general view of the structure and function of the digestive and hepatobiliary systems and the common diseases affecting it.

This is achieved in the following aspects: (1) The anatomy and physiology of the gastrointestinal tract and the hepatobiliary system; (2) Investigation of gastrointestinal and hepatobiliary diseases; (3) Major manifestations of gastrointestinal and hepatobiliary diseases; (4) Overview of diseases affecting the gastrointestinal tract: Esophagus, Stomach and duodenum, Small intestines, Pancreas, Colon and rectum; (5) Overview of diseases affecting the hepatobiliary system: Liver, Biliary system; and (6) Study of clinical cases.

**BMSC 3015 Infectious Diseases and Immunology Diseases (2,2,0) (E)**

Infectious diseases cause morbidity and mortality in man despite the advent of immunization and antibiotics. It is important that healthcare givers are familiar with the general aspects of individual infectious diseases, including epidemiology, diagnosis, prevention and treatments.

The objective of this course is to give students a basic knowledge of the various aspects of infectious diseases.

Teaching contents of this part: (1) Concepts of infection: Patterns, infectious agents, source, routes of transmission, prevention and control of infection; and Microorganism-host interactions; (2) Major manifestations of infection and investigative methods of infectious diseases; (3) Principles of management of infection; (4) Study of diseases caused by various infecting agents, including clinical features, investigations, management, complications, prognosis and prevention: Diseases due to viruses, Diseases due to chlamydiae and rickettsiae, Diseases due to bacteria, Diseases due to spirochetes, Diseases due to fungi (mycoses), Diseases due to protozoa, Diseases due to helminthes, Diseases due to arthropods, Sexually transmitted diseases; and (5) Case studies: Discussion of several clinical cases of infection.

'Immunology Diseases' is the topic on the disorders in immune system, including but not limit to autoimmune diseases and rheumatic diseases, which affect people at all ages and constitute a big medical issue. The objective of this course is to give the students a general introduction for clinical practice in autoimmune/rheumatic diseases and the common diseases caused by dysfunction of immune system.

This is achieved in the following aspects: (1) Anatomy of the synovial joint; (2) Clinical approach to the patient with autoimmune/rheumatic diseases; (3) Overview of the common autoimmune/rheumatic diseases: Rheumatoid arthritis, Osteoarthritis, Systemic lupus erythmatosus, Ankylosing spondylitis, Multiple sclerosis, Psoriasis, Graves' disease, Vasculitis, Myasthenia gravis; and (4) Clinical case studies.

**BMSC 3016 Respiratory System (2,2,0) (E)**

The respiratory tract is directly open to the outside environment and is easily affected by external changes. Primary respiratory diseases are responsible for a major burden of morbidity and untimely death, and the lungs are often affected in multisystem diseases.

This course aims at offering students a general overview of the Respiratory System and diseases affecting it in the following aspects: (1) The gross anatomy of the respiratory tract from the nose to the lung alveoli; (2) The physiology of ventilation and

gas exchange; (3) Pathological changes and pathophysiology in the airway and lungs; (4) Clinical manifestations of respiratory disorders; (5) History taking and physical examination of the respiratory system; (6) Investigative methods of the respiratory system; (7) Overview of common diseases of the respiratory system: Infection, upper and lower respiratory tract, Pulmonary tuberculosis, Obstructive airway diseases, Neoplastic diseases, Pulmonary vascular diseases, Pneumoconiosis, Interstitial lung diseases, Diseases of pleura and mediastinum, Diseases of nasal pharynx, larynx and trachea; and (8) Study of clinical cases.

**BMSC 3017 Endocrinology (2,2,0) (E)**

The endocrine system together with the nervous system are the two major control systems that allow specialized tissues to function in an integral way. Endocrinology concerns the synthesis, secretion and action of hormones, which are chemical messengers that coordinate the activities of different cells.

Apart from diabetes mellitus, endocrine diseases are a relatively rare cause of death. But the common occurrence of endocrine disorders requires certain knowledge in this field.

The aim of this course is to provide students with a general overview of the endocrine system in the following aspects:

(1) General concepts of the endocrine system; (2) Testing of endocrine functions; (3) Introduction to endocrine diseases; (4) Study of individual endocrine glands: The hypothalamus and the pituitary gland, The thyroid gland, The parathyroid gland, The adrenal gland, Diabetes Mellitus, (Sex hormones are included in the Reproductive System); and (5) Study of clinical cases.

**BMSC 3025 Medical Ethics (1,1,0) (E)**

This course aims (1) to introduce students to the moral values of East and West; (2) to deepen the ethical sensitivity of medical students regarding their professional conduct and their clinical decisions; (3) to equip students with basic ethical concepts and applying them to ethical decisions in clinical settings; (4) to stimulate the moral imagination of students through discussions and case studies; and (5) to clarify and reflect on the important medical ethical issues in the modern world.

**BMSC 3026 Renal System (2,2,0) (E)**

The kidneys play an important role in the maintenance of the internal environment of the body. Malfunction of the kidneys can affect other systems of the body; alternatively diseases of other parts of the body can also have detrimental effects on the kidneys. It is the aim of this course to give students a general idea of the renal system in the following aspects: (1) Anatomy and physiology of the renal system; (2) Clinical manifestations of renal diseases; (3) Investigations of renal functions and imaging techniques of the renal system; (4) Overview of renal diseases: Renal vascular diseases, Glomerular diseases, Tubulo-interstitial diseases, Congenital abnormalities of the renal system, Infection of the urinary tract, Obstruction of the urinary tract, Urinary tract calculi, Tumours of the urinary tract; (5) Renal involvement in systemic diseases; (6) Drugs and the kidney; and (7) Study of clinical cases.

**BMSC 3027 Reproductive System (2,2,0) (E)**

The reproductive system is an essential system of the body. It not only is responsible for the procreation of the species, but also responsible for the hormonal control of the sexual characteristic of the individual. Derangement in this system can cause debilitating diseases of the body.

The objective of this course is to give the students a general overview of this system in the following aspects: (1) The anatomy and the physiology of the male and female reproductive systems; (2) Clinical manifestations of disorders of the male & female reproductive systems; (3) Investigative methods of the male and female reproductive systems; (4) Diseases of the male reproductive system; (5) Diseases of the female reproductive system; and (6) Cases studies.