

## **BSc (Hons) Medical Science - SC330 (Under Review)**

### **1. Objectives**

The BSc Honours degree in Medical Science is a significant landmark in the continuing development of medical and health sciences education in Mauritius. The degree programme has been developed in line with General Medical Council (GMC) 'Recommendations on Undergraduate Medical Education: Tomorrow's Doctors', 1993, so that it may serve as the pre-clinical phase of the full medical education programme. Thus, with the successful completion of the degree programme, with the award of at least an Upper Second Class Honours Degree, the graduate will be eligible for admission to Clinical Medical Studies (3-4 years' duration, variable) at various overseas universities.

The following possibilities exist at present:

- (i) 3 years of study at l'Université Victor-Ségalen, Bordeaux 2, France. After having successfully completed their clinical studies and obtained the "Attestation de 2e Cycle des Etudes Medicales" in France, students will be awarded the MBChB degree by the University of Mauritius. They will then be eligible to undergo two-year pre-registration training in the various hospitals of the Ministry of Health and Quality of Life in Mauritius.
- (ii) 4½ years of study at the University of Cape Town (or Pretoria). After successful completion of their clinical studies in South Africa, students will be awarded the medical degree by the University concerned. They will then be eligible to undergo two-year pre-registration training in the various hospitals of the Ministry of Health and Quality of Life in Mauritius.

The BSc (Hons) Medical Science degree also provides a foundation from which, following postgraduate studies, graduates would be well suited for a career in biomedical or health services research, health care administration, the medical laboratory service, the commercial medical or pharmaceutical industries, or in a range of other professions allied to medicine and health care.

### **2. General Entry Requirements**

As per General Entry Requirements for admission to the University for undergraduate degrees.

### **3. Programme Requirements**

At least five GCE 'O' Level Passes (or equivalent) including Chemistry, Biology, Mathematics and English Language, and GCE 'A' Level Passes in three subjects, which should include Chemistry and normally Biology. The minimum grades required at 'A' Level are A, A, B.

### **4. Programme Duration**

Normal: 3 years

Maximum: 4 years

### **5. General Conditions**

- (i) The Programme consists of 37 core modules and two modules MED 3151 (Sémiologie Médicale) and MED 3251 (Sémiologie Chirurgicale) taught in French (compulsory for those who wish to proceed to Bordeaux).

- (ii) A module is normally 60 hours, which comprises 45 hours of lecture and 15 hours of self directed study and tutorial.
- (iii) Modules will not be assessed separately except for modules CSE 1010e (Introduction to Information Technology), MED 1161 (Biophysics), MED 1271 (Biostatistics), MED 3151 (Sémiologie Médicale) and MED 3251 (Sémiologie Chirurgicale).
- (iv) For the award of BSc (Hons) Medical Science degree, students need to pass in all exam papers including the project. In addition they must complete satisfactorily their clinical training during clinical placements at the end of each year.
- (v) The final assessment will be based on the performance of the student throughout the 3/4 years of study.
- (vi) In case of failure in any paper for papers assessed in a combined and integrated form, students will be allowed a resit examination per year. In case of failure in one resit paper, students may repeat the year unless decided otherwise by the Board of Examiners, Faculty Board and Senate.
- (vii) In case of failure in papers for modules assessed separately i.e. MED 1161 (Biophysics), MED 1271 (Biostatistics) and CSE 1010e (Introduction to Information Technology), students can retake these modules in year 2 or year 3.
- (viii) In case of failure in modules MED 3151 (Sémiologie Médicale) or MED 3251 (Sémiologie Chirurgicale), students will be allowed a resit examination in the paper(s) failed. Students wishing to proceed to Bordeaux for the second cycle (DCEM II) need to pass these modules.
- (ix) Pass mark for papers assessing MED modules is 50%.
- (x) Students will be awarded passmark (50%) in resit/retake examinations for MED modules.
- (xi) In case a student has to repeat a year, no exemptions will be allowed for papers passed in the failed year.
- (xii) A student who is sick or has been unable to take an examination for other valid reasons to the satisfaction of the Dean of Faculty and Chairman of Senate will be required to take a Special Examination.

## **6. Assessment**

It is essential in medicine that a combined and an integrated form of assessment be implemented. Modules will NOT be examined separately except for the following modules CSE 1010e, MED 1161, MED 1271, MED 3151 and MED 3251.

- (i) Written assignments covering all modules will be given throughout semesters 1 and 2. Weighting: 100 marks per year.
- (ii) Students will be examined on clinical skills by continuous assessment. Weighting: 100 marks per year.

- (iii) A True/False paper examination of 2-hour and 30 minutes duration will be given at the end of semester 2 of each year (Papers 1, 4, 7). Negative marking will be applied for these papers.  
Weighting: 100 marks per year.
- (iv) A data interpretation paper examination of 3 hours based on the ability to interpret various medical data at the end of semester 2 of each year (Papers 2, 5, 8).  
Weighting: 100 marks per year.
- (v) A 3-hour examination consisting of a paper of short notes on 10 topics chosen from a set of 12 at the end of semester 2 of each year (Papers 3, 6, 9).  
Weighting: 100 marks per year.
- (vi) The two modules MED 1161 (Biophysics) and MED 1271 (Biostatistics) will each be assessed by a 2-hour written examination at the end of semester 2 in year 1.  
Weighting: 30 marks per paper.
- (vii) The two modules taught in French MED 3151 (Sémiologie Médicale) and MED 3251 (Sémiologie Chirurgicale) will each be assessed by a 2-hour written examination at the end of semester 2 in year 3.  
Grades A, B, C or F will be awarded for these modules.
- (viii) For the module CSE 1010e, a 2-hour examination consisting of a paper of short notes on 4 topics chosen from a set of 6 at the end of semester 1 of Year 1 and continuous assessment throughout that semester.  
Weighting: 40 marks
- (ix) Clinical placement: under supervision of staff from the Ministry of Health.  
Students have to satisfactorily complete their clinical training during hospital placement (Grade S or U)
- (x) The project submitted towards the end of sixth semester (3<sup>rd</sup> year) will be worth 24% of the total marks allocated for the 3 years.

## 7. Grading

Grade	Marks, x (%)
A	$\geq 70$
B	$60 \leq x < 70$
C	$50 \leq x < 60$
F	$< 50$

Grade S Satisfactory completion  
Grade U Unsatisfactory completion

## 8. Classification of Award

First Class:  $\geq 70\%$   
Second Class: Upper Second  $60 \leq x < 70$   
Lower Second  $50 \leq x < 60$

## 9. Programme Plan - BSc (Hons) Medical Science

YEAR 1			
Semester 1		Semester 2	
Code	Module Name	Code	Module Name
MED 1111	Medicine in Society 1	MED 1211	Medicine in Society 2
MED 1121	Basic Cell Biology	MED 1221	Basic Pharmacology
MED 1131	Tissue and Organ Biology	MED 1231	Cardiovascular System
MED 1141	Molecular Biology and Genetics	MED 1241	Lungs and Respiratory Tract
MED 1151	Blood	MED 1251	Basic Microbiology
CSE 1010e	Introduction to Information Technology	MED 1261	Clinical Skills 1
MED 1161	Biophysics	MED 1271	Biostatistics

  

YEAR 2			
Semester 1		Semester 2	
Code	Module Name	Code	Module Name
MED 2111	Medicine in Society 3	MED 2211	Medicine in Society 4
MED 2121	Nutrition, Metabolism and Endocrinology	MED 2221	Kidney and Urinary Tract
MED 2131	Gastrointestinal and Hepatobiliary Systems	MED 2231	Human Reproduction
MED 2141	Central Nervous System (Head and Neck)	MED 2241	Pathology
MED 2151	Central Nervous System and Peripheral Nervous System	MED 2251	Skeletal and Locomotor Systems
MED 2161	Immunology	MED 2261	Clinical Skills 3
MED 2171	Clinical Skills 2		

  

YEAR 3			
Semester 1		Semester 2	
Code	Module Name	Code	Module Name
MED 3000	Project	MED 3000	Project
MED 3111	Medicine in Society 5	MED 3211	Medicine in Society 6
MED 3121	Clinical Microbiology	MED 3221	Parasitology
MED 3131	Clinical Immunology	MED 3231	Tropical Medicine
MED 3141	Clinical Skills 4	MED 3241	Clinical Skills 5
MED 3151	Sémiologie Médicale	MED 3251	Sémiologie Chirurgicale

### Clinical placement

As from year 1, students are placed during a specific period to undergo training in nursing care under the supervision of nursing administrators as well as charge nurses. Students are expected to acquire basic nursing skills to enable them to cope with future modules.

During year 2 and year 3, students are placed in hospitals under the supervision of consultants and specialists. Students are expected to acquire basic clinical skills and make use of the acquired knowledge during clinical skills classes.

At the end of each placement, students are expected to submit a comprehensive report of the work experience acquired to the programme coordinator.

## **10. Outline Syllabus**

This outline syllabus is not prescriptive and is intended to serve as a guide only.

### **CSE 1010e - INTRODUCTION TO INFORMATION TECHNOLOGY**

IT and Computers; Stepping in the Computer; Input and Output Devices; Secondary Storage; Programming; Systems Software; Applications Software; Systems Development; Computer Networks; The Internet; Computer Security; Software Utilities; Issues and Trends in IT.

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### **MED 1111 - MEDICINE IN SOCIETY 1**

Medicine in society is an integrated course and is taught in six modules across the three years. This first module focuses on the 'family' and includes Family Study project work on pregnancy, birth, and the impact of a baby in a family setting, human development from infancy to adolescence, and sociological and psychological perspectives of families. Communication and research skills will be developed in the module.

### **MED 1121 - BASIC CELL BIOLOGY**

Essential principles and processes of cell biology with examples to show the clinical significance of a knowledge and understanding of the structure and function of the cell. This module will include: an introduction to biologically relevant molecules (proteins, carbohydrates, lipids, and nucleic acids); cell membranes and organelles; energy production and membrane transport (diffusion, facilitated diffusion, and active transport); the cytoskeleton and intracellular transport; biology of the nucleus and an introduction to the central dogma ('DNA makes RNA makes protein'); an introduction to cell division and proliferation, including the cell cycle and its control, an overview of mitosis, cell kinetics and the control of cell division.

### **MED 1131 - TISSUE AND ORGAN BIOLOGY**

Essential principles of embryogenesis and the developmental anatomy of the conceptus from fertilisation up to the completion of the embryo (i.e. up to the 4th week of development, including formation of the head, tail, and lateral body walls). Structure and function of: epithelia, connective tissues (including the hard tissues of bone and cartilage), muscle, and nervous tissue. Structure and function of the skin taken as an example to illustrate how tissues are combined to form an organ and as an example of cell renewal; simple introduction to common dermatological conditions as examples of disordered structure and function. Introduction to homeostasis and control of the internal body environment, including an overview of the structure and function of the autonomic nervous system.

### **MED 1141 - MOLECULAR BIOLOGY AND GENETICS**

Students will be exposed to the progress from Mendelian genetics to the modern understanding of the gene at the molecular level. Stress will be made on the notion that understanding how cells work at the molecular level is an important aspect of finding a cure for dysfunction that results in specific illnesses. Emphasis will be placed on gene structure, function and regulation with a view to understand genetic and other diseases. Genetic epidemiology of certain diseases will be explored. Variation in chromosome structure and the resulting anomalies will be examined. Lectures will be supplemented with case studies, laboratory practicals or demonstration wherever possible.

### **MED 1151 - BLOOD**

The formed elements of blood and an introduction to the physiology of plasma proteins, including a classification of blood cells and the role of plasma proteins in exerting plasma oncotic pressure. Haematopoiesis, including the monophyletic origin of blood cells, renewal by pluripotential stem cells, erythropoiesis and granulopoiesis, regulation by glycoprotein growth factors. Aplastic anaemia and acute leukaemia as examples of bone marrow failure. The concept of anaemia, including the structure and function of the erythrocyte, the biochemistry and physiology of haemoglobin, normal and abnormal, and its role in oxygen carriage. Simple deficiency disorders, including deficiencies in iron, folate and vitamin B12. Homeostasis, including the biology of platelets and the clotting factor cascade. Fibrinolysis, including clot dissolution, clotting disorders and an introduction to anticoagulant therapy. Overview of immunity, including an overview of leucocyte function, phagocytic cells and an introduction to immunoglobulin structure and function. Blood transfusion, including the ABO and rhesus blood groups, and a consideration of transfusion risks.

### **MED 1161 - BIOPHYSICS (45 hrs)**

Geometrical optics, ECG, sensors and measurement systems, sound and ultrasound waves. Echography and Doppler effects. Elements of radioactivity, interaction radiation-matter, detection and measurement of radiations, radioactive decay, isotopes and radioactive tracers, X-rays; production, spectrum and absorption, radiography. Introduction to NMR and other imaging systems applied to medicine.

### **MED 1211 - MEDICINE IN SOCIETY 2**

In this module people will be considered in 'Populations and Societies'. Epidemiological science will be introduced: causes, spread, measurement, determinants and prevention of disease will be closely examined. The life cycle strand which addresses adulthood includes work on sexuality. Ways people behave in groups, communities and societies are considered in the psychology and sociology sessions.

### **MED 1221 - BASIC PHARMACOLOGY**

A basic understanding of how drugs work beginning with pharmacokinetics, receptor binding, transport of drugs intracellularly, absorption, excretion, volumes of distribution and clearance. It is anticipated that some of this module will be taught by computer assisted learning. Examples of drugs will be given in this module where more specific action will be dealt with in appropriate modules.

### **MED 1231 - CARDIOVASCULAR SYSTEM**

The basic anatomy and function of the heart and pericardium will be discussed with the function and microanatomy of cardiac muscle. Septation of the heart and the foetal circulation will be considered in outline. Pressure changes and sounds during a single cardiac cycle together with the associated electrical events will be stressed. In addition nervous control of heart rate and hormones which have major effect will be included as will drugs such as atropine, calcium channel blockers and cardiac glycosides which have major effects.

The general structure of the peripheral circulation and its histology will be discussed and the mechanism by which blood returns to the heart. The baroreceptor reflexes and other controllers of blood pressure will be included as will some central control mechanisms. Diseases of the heart and circulation will be considered briefly.

### **MED 1241 - LUNGS AND RESPIRATORY TRACT**

The basic anatomy of the thorax and diaphragm will be explored and the way the rib cage moves during ventilation under the influence of various respiratory muscles discussed. The pressures in the pleural cavity and other changes during a ventilatory cycle will be described as will movement and flow in the airways. Gas exchange across the alveoli will be described and effects of altering the various partial pressures of gases explored. Narrowing of the airways and its consequences will be

given prominence together with drugs which alter the resistance of the airways. The importance of chronic disease and cyanosis will be emphasised.

### **MED 1251 - BASIC MICROBIOLOGY**

Students will be introduced to the microbial world and made aware of existing tools to explore it; the importance of microbes in the biosphere and their active role in shaping life on planet earth will be examined. Starting from a historical perspective, the central role that microbes play in medicine will be investigated. The biology of microorganisms will be explored with a view to understand how microbes work and how a knowledge of microorganisms helps in understanding the biology of humans. Aspects of taxonomic relationships, safe laboratory practice and general techniques in culturing, staining and quantification will also be covered.

### **MED 1261 - CLINICAL SKILLS 1**

There will be early introduction to basic clinical skills throughout these five modules, including communication skills, history-taking and physical examination in relation to the major systems of the body. In this first module the students will be given training in performing basic clinical procedures, including venepuncture, measurement of blood pressure, assessment of major arterial pulses, simple respiratory function tests and cardio-pulmonary resuscitation.

### **MED 1271 - BIostatISTICS (45 hrs)**

Data Collection and Organisation; Sample Survey; Frequency Distributions and Presentation of Data Measures of Central Tendency, Dispersion and Skewness. Introduction to Probability. The Normal Distribution Point Estimation and Interval Estimation. Hypothesis Testing. One sample and two sample procedures. Students will be introduced to the use of different statistical tests and software packages. This module is also designed to enable students to search bibliographical databases efficiently and effectively.

### **MED 2111 - MEDICINE IN SOCIETY 3**

This module focuses on 'People as Patients' and patients as people. It includes a Patient Study based on the impact of a chronic condition on the life of a person, and his immediate family or carers. There will also be sessions on ageing, which is a continuing part of the life cycle strand.

### **MED 2121 - NUTRITION, METABOLISM AND ENDOCRINOLOGY**

This module will consider the biochemistry of carbohydrates, fats, proteins and vitamins and their usage in metabolic processes. Much attention will be paid to the control of metabolism by the endocrine system particularly insulin and its antagonists thyroid and growth hormone and diseases where these hormones are deficient and in excess. Drugs for the treatment of diabetes and thyroid diseases will be considered. Usage and balance of several minerals will be considered using calcium as an example; control of plasma calcium will be stressed. Obesity and anorexia will be considered.

### **MED 2131 - GASTRO INTESTINAL AND HEPATOBILIARY SYSTEMS**

Anatomy of the abdominal cavity, viscera and reflection of the peritoneum, including a brief overview of G.I development. The structure and function of various parts of the gastrointestinal tract will be considered. Exocrine secretions of the pancreas and liver and the function of the gall bladder is important as in bilirubin metabolism (see also Blood). The students will need to understand how digestion and absorption occur and how they are controlled and also understand how substances are moved from one part of the G.I tract to another. An understanding of the pathophysiology which affects the gut, liver and pancreas (e.g. ulceration, cirrhosis, jaundice) will be required. Drugs which alter G.I function and secretion, will also be considered.

**MED 2141 - CENTRAL NERVOUS SYSTEM (HEAD AND NECK)**

Anatomy of the head: gross topography of the brain and spinal cord; anatomy of the skull. The meninges and blood supply to the brain. The cranial cavity and its contents, including osteology of the bone of the skull, cranial nerve exits, reflections of the dura mater and dural venous sinuses. Production, circulation and reabsorption CSF. Development of the head and neck: development of neural tube and spinal cord anatomy; embryology of pharynx and its derivatives, the face and palate, and the tongue and thyroid gland. Face, nose and paranasal sinuses; cranial nerve V and VII; facial sensation and facial expression. Common abnormalities of cleft face and lip and cleft palate. Bell's palsy. Anatomy of the infratemporal fossa and oral cavity; cranial nerve V; mastication and deglutition. The tongue and pharynx; cranial nerves IX and XII.

**MED 2151 - CENTRAL NERVOUS SYSTEM (PERIPHERAL NERVOUS SYSTEM)**

Neuroanatomy and physiology of the somatosensory systems: receptors, spinal cord and brainstem pathways. The thalamus and introduction to the cerebral cortex: sensory areas. Audition and balance: anatomy and physiology of the outer, middle and inner ear; VIII cranial nerve and the central pathways for hearing and balance. 'Glue ear'. Vision: anatomy and physiology of the eye, optic nerve, optic tract and visual pathways. Anatomy of the orbit and extraocular apparatus; cranial nerves III, IV and VI. Visual and retinal fields. Visual reflexes. Neuroanatomy and physiology of motor system: motor cortex, basal ganglia and cerebellum; motor pathways in the brainstem and spinal cord. Upper and lower motor neurones. Phonation: anatomy of larynx and pharynx; anatomy of neck. Physiology of speech and its neural control. Neurophysiology of higher functions: the limbic system and memory. Rhinencephalon, taste and olfaction.

**MED 2161 - IMMUNOLOGY**

The cellular basis of the immune response: lymphocyte populations, antigen presenting cells and macrophages. Innate immunity: phagocytic functions; intracellular and extracellular killing; humoral factors: complement. Adaptive immunity: the specific, acquired immune response; cell mediated and humoral immune responses. Immunologically relevant molecules: immunoglobulins, T-cell receptors and the MHC gene products. The generation of diversity of antigen receptors. Antigen processing and presentation: exogenous and endogenous pathways. MHC restriction of T-cell response. T-cell activities and effector functions: T-cell help for antibody responses and microphage activation; T-cell cytotoxicity and the killing of virally infected cells. B-cells and immunoglobulins: antibody mediated effector mechanisms; complex function, opsonisation and complement activation via the classical pathway. Immune regulation: the interleukins.

**MED 2171 - CLINICAL SKILLS 2**

This module will focus on the use of the electrocardiogram equipment and the interpretation and analysis of ECG tracings. The student will be trained to record ECGs and to detect major abnormalities on recording. Students will also be trained in basic chest X-Ray interpretations after having understood basic radio safety rules.

**MED 2211 - MEDICINE IN SOCIETY 4**

This module turns its attention to 'Healthy People'. It includes work on relationships and health, health promotion and stages in adjustment to dying and responses to bereavement.

**MED 2221 - KIDNEY AND URINARY TRACT**

The anatomy and physiology including the histological appearance of the kidney will be studied and their role in maintaining homeostasis. Of particular importance will be the process of glomerular filtration, tubular reabsorption, secretion and the hormones which will influence these processes. Movement of urine down the ureter and its storage in the bladder prior to micturition are covered and



the anatomy of the bladder and ureters dealt with together with the nerve supply. Actions of diuretics will be included.

#### **MED 2231 - HUMAN REPRODUCTION**

Functions of the testis and control of spermatogenesis and testosterone production will be considered as well as the hormonal control of the menstrual cycle. Anatomy of the external genitalia, the uterus and ovaries and the pelvic floor will be explored. Pregnancy and the changes that this brings for the mother will be discussed as well as parturition, its control by hormones and drugs which affect them. Finally the change that the foetus undergoes as it is translated from intrauterine to a free existence will be described.

#### **MED 2241 - PATHOLOGY**

This will deal with general pathological processes and not be specific to organs. As such, it will link with other modules specifically cell death, inflammation, chronic inflammation and processes underlying cancer will be covered. It is not intended to cover all possible forms of cancer but to illustrate the underlying mechanisms. Degenerative diseases will also be dealt with.

#### **MED 2251 - SKELETAL AND LOCOMOTOR SYSTEM**

Biochemistry and physiology of connective tissues and collagen. Review calcium homeostasis. Classification, structure and function of joints. Anatomy of the upper limb: shoulder joint and the rotator cuff; the axilla and the brachial plexus; elbow joint and cubital fossa; flexor and extensor compartments of upper arm; wrist joint and hand; flexor and extensor compartments; movements of pronation and supination. Blood and nerve supply to the upper extremities. Axial skeleton and load bearing: anatomy of the vertebral column; regional variations in vertebral structure; intervertebral joints; low back pain and herniation of intervertebral disc. Anatomy of lower limb: hip joint; flexors, extensors and adductors of the hip; surgical anatomy of the femur. The knee joint; flexors and extensors of the knee. Ankle joint and movement at the ankle. The foot. Biomechanics of joint. Nerve supply to the lower limb. Blood supply to lower limb. Fracture repair. Rheumatic disorders and arthritis. Introduction to rehabilitation. Muscle contraction mechanisms and nervous control.

#### **MED 2261 - CLINICAL SKILLS 3**

In this module the student will be given training in the clinical examination of the central nervous system and peripheral nervous system. This will include examination of the peripheral sensory system, peripheral motor system, tendon reflexes, muscle coordination and cranial nerves.

#### **MED 3000 - PROJECT**

For these modules, it is intended that students either choose from a large list or suggest their own topic for in depth investigation. In doing so, they will have to define the aims and objectives, write a literature review and where appropriate perform experiments. Discussions and conclusions are important and the project should be adequately referenced. The project will ensure that students can extract information from primary source material including the Internet, will test their ability to select data and synthesize it into a coherent logical argument. Some of these will be capable of being used as reviews. It is planned that a request for project will be extended widely and could include primary health care physician in the private sector as well as in the Faculty of Science. It may be possible to use two separate projects.

#### **MED 3111 - MEDICINE IN SOCIETY 5**

Students will be introduced to various health organizations existing in Mauritius: Primary health care, community health, Area Health Centres, Occupational health, Public health, WHO, Private clinics. The impact of these health organizations on health care will be examined. An overview of other health systems (UK, France and South Africa) will also be provided.

An insight will be provided on research methodology; the importance of ethics in biomedical and clinical research will be outlined. Tutorials will be provided on preparation of data files, appropriate use of statistics, and communication skills useful for presentation of research work. Aspects of Forensic Medicine will also be considered.

#### **MED 3121 - CLINICAL MICROBIOLOGY (BACTERIA, VIRUSES, FUNGI AND PROTOZOA)**

The roles of microorganisms in infectious disease will be examined in detail. The microbial interaction with its host will be explored and the distinction between normal flora and pathogens highlighted. Special attention will be paid to virulence, attenuation and host defences. The activity of the microbiologist in medicine will be clearly defined. Several traditional and modern methods to identify causal agents of disease will be covered. Students will be exposed to epidemiology and public health microbiology with a view following how a pathogen spreads from an infected individual to others in a population. Lectures will be supplemented by case studies wherever possible.

#### **MED 3131 - CLINICAL IMMUNOLOGY**

Inflammation and immunity: hypersensitivity responses - types I, II, III and IV. Autoimmunity: immune mechanisms of pathogenicity. Organ specific and non-organ specific disease. Immunodeficiency: primary immunodeficiencies and acquired immunodeficiency disorders; hypogammaglobulinaemia; Di George syndrome; SCID; AIDS. Transplantation immunity: self v/s non-self; MHC genes and products; MHC polymorphism, haplotypes and tissue typing. Allogenic responses; cell mediated and humoral mechanisms of rejection. Renal transplantation. Bone marrow transplantation and graft v/s host reactions. Immunotherapy: interleukin and antibody therapies. Immunisation and vaccines.

#### **MED 3141 - CLINICAL SKILLS 4**

The clinical examination of a large joint will be demonstrated and the student will be given training in the detailed examination of the shoulder joint and the knee joint. Students will be trained how to detect major abnormalities of these joints.

Students will be exposed to an overview of imaging diagnostic techniques. They will be provided with a basic understanding of the advantages and disadvantages pertaining to different imaging techniques depending on the type of disease and organ to be explored.

#### **MED 3151 - SEMIOLOGIE MEDICALE (60 hrs) \***

Les étudiants devront savoir la définition précise des termes médicaux et décrire les signes cliniques normaux. Ils devront se familiariser avec la description des signes fonctionnels et physiques des maladies, pour chaque appareil. Ils devront savoir rechercher les signes fonctionnels à partir des données de l'interrogatoire, les signes physiques à partir de l'examen clinique. Ils devront savoir demander des examens complémentaires utiles dans les différents syndromes cliniques et savoir rédiger un compte rendu d'observation clinique.

#### **\*MED 3151 SEMIOLOGIE MEDICALE (translated version)**

Students will be expected to know the precise definitions of medical terms, and know how to describe findings of a normal clinical examination. They will need to know the functional and physical signs of common pathological syndromes affecting different systems. They should know how to interpret data gathered from interviewing patients and data gathered from clinical examination of patients. They should be knowledgeable about the appropriate diagnostic investigations which could be helpful in the work up of common clinical syndromes, they are expected to be able to summarise findings from a clinical observation.

**MED 3211 - MEDICINE IN SOCIETY 6**

The module will address the biological impacts of natural and anthropogenic sources of pollutants on human health. The 'pollutants' will include gaseous emissions, aquatic, sewage-borne and other biocidal chemicals, hazardous radiations and radioactive emissions. Industrial, urban and occupational health hazards will also be dealt with. The above materials will be covered by taught lectures, seminars and case studies.

**MED 3221 - PARASITOLOGY**

The course provides a balance and integrated treatment of the domain of parasitology highlighting the molecular, cellular and immunological aspects of important parasites affecting man. Special focus will be on life cycle patterns, pathogenicity diagnosis, treatment and prophylaxis of medically important protozoans, platyhelminths, and nemathelminths. Some current laboratory investigations will be considered. Emphasis will be also laid on tropical parasites.

**MED 3231 - TROPICAL MEDICINE**

This course is specially tailored to fit in the local environment that prevails in Mauritius. Emphasis will be laid on various medically important organisms like bacteria, fungi and protozoans affecting man in the tropics. In-depth studies on their morphology, life cycle, aetiology, pathogenicity, treatment and prophylaxis along with related diseases will be dealt with. Communicable and non-communicable aspects will be explored. General surveys of prevalent cases relating to different socio-economic factors will be investigated.

**MED 3241 - CLINICAL SKILLS 5**

This module will focus on the development of the communication skills of the student, specially with the interview of patients. Students will be trained in taking a full medical history from a patient, including their social history, family history, drug history, etc. Training will also be given in the clinical examination of the major systems of the body.

**MED 3251 - SEMIOLOGIE CHIRURGICALE (45 Hrs) \*\***

Etude de la sémiologie des pathologies chirurgicales affectant l'appareil locomoteur, et des pathologies neurochirurgicales, vasculaires, abdominales, gynécologiques, et urologiques.

**\*\*MED 3251 - SEMIOLOGIE CHIRURGICALE (translated version)**

Study of signs and symptoms of diseases needing surgical treatment that can affect the locomotor system, abdominal organs. gynecological, neurologic, urologic, and vascular systems.