

OBJECTIVES OF THE MB BS

It is expected that on completion of the MB BS programme, the graduates will have attained knowledge, attitudes, and skills as described in the following five areas:

I. Basic Medical Sciences

- obtain basic information on body systems;
- acquire a scientific approach for actions from hypotheses, which lead to self-directed learning, as well as prognosis, diagnosis, and therapy with respect to medical conditions in both sexes;
- process information on normal and abnormal function in molecular, somatic, biological, mental, and social structure and function in deriving diagnosis;
- utilise information technology for information management in medical education.

II. Clinical and therapeutic methods, procedures, and investigations

- demonstrate competence in the management of medical emergencies including first aid and perform simple clinical procedures;
- assess the health status of individuals and groups through observation and data collection from sources including the medical history, clinical examinations, laboratory investigations, and significant others within the dynamics of patients' relationships;
- engage in medical problem-solving process in order to derive a clinical diagnosis;
- prepare and/or implement a plan of patient management and care including appropriate referral.

III. Community Health and Family Medicine

- demonstrate sensitivity and respect for the rights of individuals and groups in a multicultural society;
- maintain effective doctor-patient relationships especially those involving patient education;
- collaborate with individuals and communities in identifying and achieving defined health goals;
- utilise epidemiological data, and cultural determinants of health in appraising the level of wellness, illness and health in a society;
- apply the principles of epidemiology and public health and an awareness of the social impact of illness to the practice of medicine in the community.

IV. Communication Skills

- communicate effectively with patients, families, and other members of the healthcare team;
- prepare clear and concise records, reports, letters of referral and other patient related documents.

V. Professional competence

- knowledge of the healthcare system and ethical/ legal issues, socio-economic conditions that impact on the provision of care;
- critically appraise the published scientific literature;
- keep abreast of social, medical, and technological advances through participation in continuing medical education and research;
- practice medicine within the ambit of professional medical ethics and the law;
- maintain quality assurance initiatives;
- function as a member of the healthcare team.

Specific Objectives

Integrated Basic Medical Sciences

- To acquire a scientific approach to decisions for diagnosis, therapy, and prognosis on health conditions;
- To apply relevant knowledge from the biomedical and behavioural sciences to the care of individuals, families, and groups in the community and hospital settings;
- To utilise informatics in the management of medical information as well as office practice;
- To differentiate normal and abnormal structure and function in biomedical, somatic and mental operations of the human body system, male and female, throughout the life cycle;
- To recognise the progression in the disorder of human function because of the biology of disease.

Communications

- To prepare clear and concise records, reports, letters of referral and other patient-related documents;
- To communicate effectively with patients' families, and other members of the health care team;
- To conduct patient education especially in areas of child health and chronic diseases;
- To enhance the doctor-patient relationship through effective communication skills;
- To engage in referral and consultation with other members of the health care team to the benefit of the patient.

Family and Communication

- To empower individuals, families, and communities to develop self-reliance regarding their own health care;
- To plan and/or engage in health promotion activities aimed at promoting healthy lifestyles in individuals and communities;
- To collaborate with individuals and communities in identifying and achieving defined health goals;
- To prepare a family study report based on activities performed in the Community Health Outreach Programme;
- To apply the principles of public health and epidemiology with an awareness of the social impact of illness on the practice of medicine in the community;
- To demonstrate sensitivity and respect for the rights of individuals and groups;
- To appraise critically the folk tradition's alternative therapies related to the health that exists within a community.

Clinical Methods and Procedures

- To demonstrate competence in the initial management of medical emergencies, especially as a first responder;
- To engage in effective medical problem-solving and clinical diagnosis;
- To assess the health status of individuals and groups through observation and data collection by way of – medical history, clinical examination and laboratory findings;
- To perform simple clinical procedures;
- To prepare to implement a management plan including appropriate referral;

- To involve the patient and family in the plan for care and utilise cultural determinants of health in assessing the health and wellness status of communities;

- To prescribe therapeutic methods on the basis of appropriate investigative procedures;

- To recognise the role of nutrition in maintaining wellness, prescribing diet therapies where they are relevant.

Professional Competence

- To participate in health care research;

- To practise medicine within the ambit of professional medical ethics and the law;

- To keep abreast of social, medical, and technological advances through participation in continuing medical education;

- To critically appraise the published scientific literature;

- To be accountable for professional and personal actions in the care of patients;

- To participate willingly in the training of other health care workers;

- To evaluate the results of treatment procedures and to follow up with appropriate feedback;

- To function harmoniously and constructively as a member of the multi-disciplinary team within the health sector and between the health sector and other sectors of the society;

- To participate in planning, organising, directing and evaluating health care;

- To engage in quality assurance initiatives;

- To prescribe health care with a consciousness of the socio-economic conditions among individuals and communities.

SCHOOL OF BASIC HEALTH SCIENCES PHASE I PROGRAMME

BASIC HEALTH SCIENCES

Basic Health Sciences courses include Anatomy, Physiology, Biochemistry, Pathology, Pharmacology and Community Health as far as they can all be integrated into a holistic programme. In Anatomy, gross anatomy, radiological and surface anatomy, and neuroanatomy are incorporated. The courses are delivered through blocks or modules (coded as MDSC1001 and MDSC1002; MDSC1101 and MDSC1102; MDSC2001 and MDSC2002; MDSC2101 and MDSC2102; and MDSC3310) over five (5) semesters. Information will be acquired through large group lectures, laboratory demonstrations, Problem Based Learning sessions, students' self-directed study, training in the skills laboratory, as well as through the medium of integrated clinical presentations. The courses are arranged on an organ system approach and facilitate the integration of basic medical sciences with clinical sciences.

COURSE LISTING

Level	Semester	Course Code	Course Title
1	1	[MDSC1001]	Environment and Health
		[MDSC1002]	Basic Para-Clinical Sciences
2	2	[MDSC1101]	Digestion and Metabolism
		[MDSC1102]	Cardiovascular and Renal
	1	[MDSC2001]	Respiration
		[MDSC2002]	Neurosciences and Behaviour
3	2	[MDSC2101]	Endocrine and Reproduction
		[MDSC2102]	Muscles, Bones and Joints
	1&2	[MDSC3310]	Pathology- Microbiology/ Pharmacology/ Community Health
		[MDSC3280]	Skills Training Skills Lab

COURSE DESCRIPTIONS

Level: 1

Semester: 1

Course Code: [MDSC 1001]

Course Title: ENVIRONMENT AND HEALTH

Number of Credits:

Prerequisites: None

Co-requisites: None

Course Description: This foundation course is a prerequisite to all the other courses in the Basic Health Sciences Course; it is designed to meet the requirements of basic knowledge of the Basic Health Sciences curriculum. The eukaryotic cells that form multicellular animals and plants are complex interdependent entities, which live in communities and exhibit varying degrees of specialisation. The elaboration of multicellular organisms has selective advantages by affording an increase in size and the range of specialisation for movement, sensory detection, homeostatic control, communication, and social organisation. These innovations enable eukaryotic organisms to compete, propagate, and survive in more complex ways in diverse environments. Students will be required to cover the study of eukaryotic cells, the anatomy of various cell types, tissues, and organs, and the biochemistry, physiology, pathology, and pharmacology of normal and disease states. Of importance, is that students appraise the ways in which organisms cope with changes in the external environment and preserve constancy of the internal environment. Concepts of health, illness and disease, and epidemiology will be highlighted.

Level: 1

Semester: 1

Course Code: [MDSC 1002]

Course Title: BASIC PARA-CLINICAL SCIENCES

Number of Credits:

Prerequisites: None

Co-requisites: None

Course Description: During this course, students will be required to describe the structure and function of the haematopoietic and immune systems. The morphological and physiological changes in cells and tissues in response to disease will be covered. The structure and pathogenic mechanisms of microbes associated human and animal disease will be delivered.

The students will be required to describe the approaches to the laboratory diagnosis of disease. The Health Field concepts with biological, environmental and social determinants of health will be highlighted. In addition, the health care delivery system will be appraised with an emphasis on ethical issues and the role of the caregiver.

Level: 1

Semester: 2

Course Code: [MDSC 1101] [VETM 1103]

Course Title: DIGESTION AND METABOLISM

Number of Credits:

Prerequisites: None

Co-requisites: None

Course Description: The purpose of this course is to enable students to acquire knowledge and develop in-depth understanding in the areas of Nutrition, Metabolism, Public Health medicine and Pharmacology. In Nutrition, students cover the essentials of good nutrition and the metabolic requirements at all stages of the life cycle, the role of various components of the diet and their effects on blood chemistry and nutrition-related diseases in the Caribbean. The assessment of nutritional status, nutritional elements important for the formation of healthy dentition and environmental factors that impact on nutrition as well as the concepts of malnutrition including obesity are covered. In Digestion and Absorption, the basic science concepts related to the Anatomy, Histology, Embryology, Physiology and Biochemistry of mastication, deglutition and digestion; the basic electrical and mechanical properties of smooth muscle in the wall of the gastrointestinal [GI] tract, the coordination of motor patterns of the oesophagus, stomach and the intestines, including the reflexes which govern vomiting and defaecation will be incorporated as well as the disturbances of the above patterns, e.g. those that can occur after surgery. New concepts on the role of gut hormones on GI function will be included. In Metabolism, protein, fat, carbohydrate and mineral metabolism (including the role of the liver in these processes) will be discussed; The team in the Public Health component of this course is "Digestion through the Ages. The student will be introduced to the clinical application of the knowledge gained in Anatomy, Physiology and Biochemistry to nutritional issues in pregnancy, child health, adolescence and the elderly. Emphasis in the elderly will focus on chronic diseases such as coronary artery diseases, hypertension and diabetes. In Pharmacology, the use of drug therapy in acid related disorders, parasite infestation, drug therapy of constipation, vomiting, diarrhoea and other gastrointestinal infections will be described.

Level: 1

Semester: 2

Course Code: [MDSC1102] [VETM 1104]

Course Title: CARDIOVASCULAR AND RENAL

Number of Credits:

Prerequisites: None

Co-requisites: None

Course Description: This course covers the gross anatomy, histology and embryology of the heart. It also covers the embryology, gross and microscopic anatomy of the blood vessels, the lymphatics, the kidney and the urinary tract. The mechanisms and regulation of cardiac and renal functions, blood pressure, and lipid transport, the body fluid compartments and acid-base balance and risk factors for cardiac disease are also incorporated into the course. The thoracic cavity and the mediastinum will also be studied.

The course includes laboratory sessions on the above areas, including cardiovascular evaluation by ECG recording and autonomic control of the cardiovascular system. The separation of blood lipids using chromatography and the determination of cholesterol and ATP synthesis and action are also incorporated into the practical sessions. The biochemistry of lipids and lipoproteins will also be covered in this course.

Skills training sessions on history taking and physical examination of the cardiovascular and the renal systems will also be conducted during the course.

Level: 2

Semester: 1

Course Code: [MDSC2001]

Course Title: RESPIRATION

Number of Credits:

Prerequisites:

Co-requisites:

Course Description: This course on human respiration, which is offered in the first semester of Year 2, is of five weeks duration. Although there is a stronger emphasis on Physiology, through its concepts and principles, the other pre-clinical disciplines of Anatomy and Biochemistry play an important role in this integrated course. Public Health and Primary Care concerns, including respiratory insults occasioned both by domestic and industrial factors, their impact on the human respiratory system and current management strategies will also be addressed. The disciplines of Pathology & Microbiology and Pharmacology are included insofar as they facilitate holistic learning.

The course is delivered predominantly through Problem Based Learning (PBL) sessions, but also comprises core lectures and laboratory exercises. End of course and end assessment may encompass all of the foregoing modalities. Detailed information is provided in the PBL booklets, which will be distributed at the beginning of the course.

Level: 2

Semester: 1

Course Code: [MDSC2002]

Course Title: NEUROSCIENCES AND BEHAVIOUR

Number of Credits:

Prerequisites:

Co-requisites:

Course Description: Processes within the Central Nervous System (CNS) all work together to facilitate perception, memory, and man's ability to learn, in addition to the control of vegetative functions and the coordination of muscle activity as man interacts with others and the environment. Dysfunction in the CNS accounts for many abnormal states, both psychiatric and neurological. This course endeavours to facilitate learning on how the nervous system functions, and the rationale for treatment of its dysfunction. The development, structure, and function of the CNS will be covered. The way in which heredity and environment affect development or maldevelopment of the individual and the family will also be appraised. Attention will be given to various neural pathways involved in autonomic activity, the regulation of various biological rhythms, and sensory perceptions. The use of knowledge of functional localisation in the CNS to establish pathological states will be explored. The concept of cerebral circulation and the control of cerebral blood flow in normal and disease states will be described along with the ways in which neoplasms and the infective and toxic agents affect nervous tissue.

Level: 2

Semester: 2

Course Code: [MDSC2101]

Course Title: ENDOCRINE AND REPRODUCTION

Number of Credits: Prerequisites:

Co-requisites:

Course Description: This course highlights the homeostatic control of the human body by the endocrine system, which is composed of ductless glands distributed in a variety of tissues throughout the body. The secretory products (hormones) of these glands are generally transported by the blood's vascular system to remote sites of action. Students will be introduced to the anatomy of the hypothalamic – pituitary axis and the histology of the various endocrine glands, the mechanism of action of hormones and the regulation of metabolism and other biochemical and physiological processes by hormones and the concept of receptors in signal reception and transduction, and their mode of action. In addition, the role of hormones in negative and positive feedback control of human reproductive systems will illustrate the inextricable link between the gonads (testes and ovaries), and the hypothalamic – pituitary axis. The relationship between the endocrine and nervous system will also be discussed and various pathologies involving defects in receptors or at various post-receptor points in the cell-signalling pathway will also be presented.

Level: 2

Semester: 2

Course Code: [MDSC2102]

Course Title: MUSCLES, BONES, AND JOINTS

Number of Credits:

Prerequisites:

Co-requisites:

Course Description: This course is of seven (7) weeks duration and is offered in Semester 2 Year 2. Students will be exposed to the integrated teaching of three pre-clinical disciplines- Anatomy, Biochemistry and Physiology, which will enable them to acquire knowledge and understanding of the functional morphology of the human loco-motor apparatus.

Emphasis will be given to the study of gross and microscopic anatomy and the embryology of muscles, bones and joints comprising the musculo-skeletal system. An interpretation of radiological images of bones and joints, the functional tests of the principle muscles, the physiological and molecular basis of muscle contraction and the energy sources used in the functioning of various types of muscle cells, the effect of hormones, vitamins and other factors on muscles, bones and joints are among important objectives for this course.

The most common lesions of bones, joints and muscles, the principles of myography, the drugs that act primarily on bones, skeletal muscles and neuromuscular junctions and their clinical and applied aspects are also included with the objectives in Pathology and Pharmacology, since they facilitate learning in a holistic manner. The course is delivered through PBL sessions and large group exercises, including lectures, labs and basic science demonstrations.

Level: 2

Semester: 1 & 2

Course Code: [MDSC3310]

**Course Title: PATHOLOGY-MICROBIOLOGY/
PHARMACOLOGY/COMMUNITY HEALTH**

Number of Credits:

Prerequisites:

Co-requisites:

Course Description: This course is run over the two semesters in Year 3 of the Phase I programme. Teaching is delivered by lecturers, PBL sessions and practical sessions in the diagnostic laboratories.

The course covers the aetiology, biochemical basis, pathogenesis, the clinical features, laboratory diagnosis and drug management of the common diseases that affect all human organ systems.

Measures to prevent and control the diseases are explored in this course together with the Community Health programme of the same year.

Level: 3

Semester:

Course Code: [MDSC3280]

Course Title: SKILLS TRAINING

Number of Credits:

Prerequisites:

Co-requisites:

Course Description: This course seeks to adequately prepare students to practise the art and science of clinical medicine in their continuing training at the highest ethical standards, with mutual respect for colleagues and with due regard for the rights of patients, and the importance of the team approach to the delivery of healthcare. Throughout the course, which spans five semesters, students will be required to relate the practice of clinical skills to the relevant areas of the basic sciences curriculum thereby reinforcing their capability for diagnosis of health conditions. Semester 1 will involve students in cardiopulmonary resuscitation (CPR) for the targeted responder to recognize and react to critical health emergencies to the level of the American Heart Foundation basic life support (BLS) standard. Training will be conducted in the Skills Laboratory as well as through site visits. Students will practise with models and kits and also with simulated patients. Teaching of clinical skills will be supplemented by large group lectures as well as through self-directed approaches with audiovisual and computer generated models in the Medical Sciences Library.

SKILLS LAB (195 hrs)

Level: 1, 2, & 3

Semester: 1&2

Description:

Specific Information

The objective of the current Skills training programme for medical and dental students is: To introduce medical science students to clinical methods such that they may be adequately prepared to move from the Preclinical setting (Phase I) into the clinical clerkships (Phase II) with essential competencies.

The skills referred to include:

The HPI model (History Physical Examination & Investigation)

- relevant motoric skills
- suturing
- urinary bladder catheterisation
- digital rectal examination
- blood pressure measurement
- intramuscular injection
- intravenous infusion
- basic life support
- interpretive skills
- radiology

The Skills training programme, which runs parallel to the PBL blocks in the School of Basic Health Sciences, employs several modes of instruction, including standard medical equipment, models, mannequins, simulated and real patients, which are all invaluable adjuncts to teaching and learning during the basic science phase. Year 1 students are taught and given to practice broad-based skills, while Years 2 and 3 are given a system-based approach (vide infra).

Skills Training Programme

YEAR 1

SKILL	History Taking Basic Life Support Suturing
RESOURCE	Simulated patients Anaesthetic equipment Arm models

YEAR 2

SKILL	Physical Examination
RESOURCE	Simulated and real patients

YEAR 3

SKILL	Integration of the history, physical examination and the use investigations to arrive at a clinical diagnosis
RESOURCE	As for Year 2 As above/OSCE Relevant models

Basic relevant Radiology is taught during each system-based block.

The Skills training programme in the School of Basic Health Sciences culminates in assessment by way of the Objective Structured Clinical Evaluation (OSCE), which Phase I students must pass prior to proceeding to Phase II. Students will not be allowed to begin Phase II unless they are successful in the OSCE, even if they have passed the Phase I theory examinations.

Skills training are at present also available for Years 4 and 5. Fourth (4th) year students may, in groups, arrange simulated patient encounters in the Skills lab, for the purpose of honouring their history taking skills on the wards. In Year 5, training in Advanced Life Support is given, using resuscitation models and equipment during the Anaesthetic clerkship.

General Information

1. Students interfacing with simulated and real patients, who are professionals in training, will be expected to adhere to an appropriate dress code.
No student will be allowed to enter the Skills lab dressed in caps, shorts, jeans, T-shirts, sandals, slippers, sneakers etc. Students are required to wear lab coats over acceptable "street" clothing.
2. Students are expected to arrive at the Skills lab at least five minutes before the scheduled start of each session, in order to register with the Skills lab secretary before the session. This is necessary for the smooth operation of the several classes being held at the same time.
3. Students must bring to the Skills Laboratory their own stethoscope and penlight Skills lab for the relevant system-based portion of the training programme as these items are not provided by the Skills lab.
4. A short manual on basic history taking will be given to each student at the first Skills lab session in Year 1. (This manual is complimentary but if lost or misplaced can be replaced for a small fee.)
5. Guidelines for the Skills training programme will be provided to all first year medical and dental students at a nominal cost, and will contain detailed information on the areas to be assessed throughout the programme.
6. A Clinical Skills training Manual is also available at the UWI Bookshop, on the main campus.