



# Handbook

MBBS Degree Programme 2024

**FACULTY OF MEDICINE**  
**GENERAL SIR JOHN KOTELAWALA**  
**DEFENCE UNIVERSITY**



# THE LOGO OF THE FACULTY OF MEDICINE, GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY



The two swords, anchor and wings represent the Sri Lanka Army, Navy and Air Force respectively. The serpents and winged staff represent the symbol of the medical profession.



# FOREWORD

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I congratulate you on being selected to train as a medical professional at the Faculty Medicine (FOM), General Sir John Kotelawala Defence University (KDU), the only medical school which trains military medical students in Sri Lanka.

Our undergraduates at the Faculty of Medicine include both military medical students (cadets) and non-military foreign medical students. The uniqueness of our medical faculty is the inclusion of subjects such as aeronautical, naval, nuclear, emergency, trauma and critical care medicine in addition to the subjects of a normal medical curriculum. The academic programme aims to develop your knowledge, skills and attitudes with the intention of producing competent, dedicated, disciplined and compassionate medical professionals who will also be continuous learners and researchers. The exposure to military practices will further enrich your university life and enable you to develop integral life skills such as discipline, commitment, teamwork, leadership and time management. Students at KDU are also encouraged and given ample opportunities to take part in sports and other aesthetic and club activities. The end result of all of the above will be to produce a well-rounded medical professional.

This handbook contains a brief history of the FOM KDU, details of the medical course, assessment methods leading to the MBBS degree, the code of conduct and examination by-laws which all medical students are expected to abide by. Disciplinary action will be taken in accordance with the rules of the KDU against any student who fails to abide by the rules and regulations of the KDU.

As you start your medical education, I wish you the very best for a successful and enjoyable career in the medical profession.

**Col (Prof) A Balasuriya**

Dean – Faculty of Medicine

General Sir John Kotelawala Defence University

January 2024



## **VISION**

To be a medical school nationally and internationally known for its unique ability to produce military and civilian medical graduates who will fulfill the health requirements of the tri-services, state sector and society at large with global outreach.

## **MISSION**

To prepare skilled leaders in the medical profession who practice patient-centered medicine of the highest ethical and medical standards across widely differing fields through training, research and lifelong education



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# **INSTITUTIONAL OBJECTIVES**

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- To be a centre of excellence in providing high quality medical education, meeting the highest international standards, responding to the changing external environment with vision, advocacy and resilience.
- To produce highly disciplined, self-motivated and dedicated doctors who show compassion and respect towards their patients and meet their health needs in the context of their families and society.
- To produce doctors with the ability to deal with humanitarian crises such as war, terrorism, man-made and natural disasters and ensure safety of civilians as well as military personnel.
- To be a centre which provides continuing professional development and postgraduate training to health care professionals.
- To be a centre for medical innovation and research which generates new knowledge to meet the health needs of the society at large.



# INTENDED LEARNING OUTCOMES OF THE MEDICAL GRADUATES

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1. To acquire knowledge, skills and attitudes required to manage common diseases within the social, religious, cultural and economic milieu of medical practice in Sri Lanka.
2. To be able to gain the trust of patients, communicate effectively and enable patients to make informed decisions about their own health.
3. To be able to provide promotive, preventive, curative and rehabilitative care to fulfill the health needs of the individual, family and community.
4. To be able to function efficiently in multi-professional and multidisciplinary teams, both as a team player as well as a team leader.
5. To develop skills of critical thinking and appraisal of medical evidence in order to practice evidence based medicine.
6. To be able to perform basic medico-legal procedures and discharge statutory duties.
7. To acquire the skills and experience required to plan, conduct and report research using a systematic and scientific approach.
8. To be a health care professional who applies ethical principles in medical practice, in conducting research and in one's personal life.
9. To be committed to teach health professionals as well as educate the society and develop the skills required to be a competent teacher and trainer.
10. To possess the appropriate attitudes towards personal and professional development through reflective practice and life-long learning.



# ADMINISTRATIVE STAFF

Dean	<p>: Col (Prof.) A Balasuriya</p> <p>Associate Professor in Public Health &amp; Family Medicine MBBS (Col), MSc (ComMed) (Col), MD (ComMed), FGDBS (Homagama) MA (Kelaniya)</p> <p><b>Office</b> : 0112 638656(Ext-272)</p> <p><b>Mobile</b> : 071 8427086</p> <p><b>Email</b> : deanfom@kdu.ac.lk</p>
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# **ACADEMIC STAFF**

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## **DEPARTMENT OF PRE-CLINICAL SCIENCES**

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### **Head of Department**

Lt. Col. (Prof.) WMMS Bandara

Professor in Biochemistry

BSc (Pdn), MSc(Pdn), MS (WSU,USA), PhD (Col), MI Biol

### **Anatomy**

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Col. (Dr) HHLK Fernando

Head - Anatomy

Senior Lecturer in Anatomy

MBBS (UOR), PGDip in Hospital Design and Hospital Administration (IIHS, Sri Lanka), MSc (Asia e-university, Malaysia), M Phil (UOR), Reading for PhD on Health Information Management and security (Asia e-university, Malaysia), Head-(Medical Information & Digital Health / UHKDU (Dept. of MI&DH).

Dr. KMN Kumarasinghe

Senior Lecturer in Anatomy

MBBS (USJP), PhD (Newcastle) (Australia), Coordinator-Centre for Behavioural Neurosciences, Co-ordinator-Personal and Professional Development.

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BSc (Hons) (USJP), MPhil (Reading) (UoK)

Dr. KDC Kaluarachchi

MBBS (University of Science & Technology Chittagong)



## Physiology

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Snr. Prof. ALS Mendis

Head – Physiology

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MBBS (Col), PhD (UoR)

Prof. Sudharshani Wasalathanthri

Professor in Physiology

MBBS(Colombo), PhD(Colombo)

Prof. Priyadarshika Hettiarachchi

Professor in Physiology

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B.Sc.(USJP), M.Sc.(UoC), M.Sc.(Reading), CTHE(KDU)

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# **Biochemistry**

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Dr. YSHTD Silva

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MBBS (UoD, UK), MSc (UCL, UK), BSc (QMUL, UK), PhD (USJP)

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# **DEPARTMENT OF PARA-CLINICAL SCIENCES**

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## **Microbiology**

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MBBS (NMC), PG Dip (Med Micro), MD (Med Micro), BSc (USA)

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## **Parasitology**

Lt. Col. (Dr.) PH Premaratne  
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## **Forensic Medicine**

Snr. Prof. PR Fernando

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MBBS, MD, FCCP, FCCGP, DMJ (London), FRCP(London), FRCP(Glasgow)FRCP (Edin), FRC(Path-UK)

# **Pathology**

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MBBS (Ruhuna), Dip in Transfusion Medicine (Col)

MD in Transfusion Medicine (Col)



## **Public Health & Family Medicine**

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Head - Public Health & Family Medicine  
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# **DEPARTMENT OF CLINICAL SCIENCES**

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## **Head of the Department**

Prof. GDI Rodrigo

Head of the Department

Professor of Paediatrics

MBBS (Col), DCH, MD Paediatrics (Col), MRCP (UK), MRCPC (UK)

D Phil (Oxon)

## **Medicine**

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Senior Lecturer in Medicine

MBBS, MD, MRCP(UK), FRCP (London), FRCP (Edin), FACP (USA)

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Air Cdre (Prof) RANK Wijesinghe

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FRACP, FCCP, FCSANZ

Snr. Prof. MHR Sheriff Senior

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## **Surgery**

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MBBS, MD (Ophth), FRCS (Ophth)

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## **Paediatrics**

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MBBS(Col), MD Paediatrics, DCH

Dr.MDAS Gunatilleka

Senior Lecturer in Paediatrics

MBBS(Col), MD Paediatrics, DCH

## **Obstetrics & Gynaecology**

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Head – Obstetrics and Gynaecology

Professor in Obstetrics and Gynaecology

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Senior Lecturer in Obstetrics and Gynaecology

MBBS, MS, MRCOG

SURG.Cpt.SNK Rodrigo

Senior Lecturer in Obstetrics and Gynaecology.

MBBS, MS, FSLCOG, FRCOG, DFSRH



**Dr. TRN Fernando**

Senior Lecturer in Obstetrics and Gynaecology  
MBBS, MS(O&G)

**Dr. DMEP Gunasekara**

Senior Lecturer in Obstetrics and Gynaecology  
MBBS, MD (Reproductive Medicine)

**Dr. CD Ekanayake**

Senior Lecturer in Obstetrics and Gynaecology.  
BBS (Pdn), MD(O&G), PhD, Dip in Advanced Laparoscopy, Fellowship in Gynecological  
Endoscopy



## **Psychiatry**

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Dr. BJ Mendis  
Head – Psychiatry  
Senior Lecturer in Psychiatry  
MBBS (Col), MD (Col), FSLCPsy, FCCP

Dr. NFJ Fernando  
Senior Lecturer in Psychiatry  
MBBS (Pdn), MD (Col), FSLCPs

Ms. TH Solomons  
Senior Lecturer in Psychiatry  
BA in Psychology (Special)(Pdn), Mphil in Clinical Psychology (Col)

Ms. MKOK De Silva  
Lecturer in Clinical Psychology  
BS Psych (Hons) (USA), MSc Applied Psych (UK)



## **The University**

General Sir John Kotelawala Defence University (KDU) was initially established as the “General Sir John Kotelawala Defence Academy” by the Parliamentary Act No 68 of 1981 and subsequently elevated to university status by the Amendment Act No 27 of 1988. KDU is located at the Kandawala Estate in Ratmalana, which was donated by the late General Sir John Kotelawala. There are nine Faculties currently established and functional in the KDU. They include the Faculty of Defence and Strategic Studies, Faculty of Law, Faculty of Management, Social Sciences and Humanities, Faculty of Engineering, Faculty of Medicine, Faculty of Allied Health Sciences, Faculty of Graduate Studies, Faculty of Built Environment and Spatial Sciences and Faculty of Computing. The last two are located in the Southern Campus at Sooriyawewa. The other Faculties and the main administrative buildings are located in the main campus at Kandawala, Ratmalana. A specific facility for research and innovation, KDU–CARE is also located within the main campus.

## **The Faculty of Medicine**

The Faculty of Medicine, KDU was established in 2009 under a memorandum of understanding with the Faculty of Medicine, University of Ruhuna (UOR). The Faculty of Medicine (FOM), KDU adopted the curriculum of the Faculty of Medicine (UOR) with a few modifications necessitated due to it being a Medical Faculty within a Defence University. A few additional subjects such as aeronautical, naval, nuclear, emergency, trauma and critical care medicine and military training were included in the course as additions to the generic curriculum. The course covers a total period of 5 years.

The first 3 batches of medical students numbering 25, 22 and 26 respectively consisted exclusively of cadets affiliated to the tri-services. They were a constituent of the 27<sup>th</sup>, 28<sup>th</sup> and 29<sup>th</sup> intakes of the KDU. The preclinical course up to the 2nd MBBS examination was conducted at the University of Ruhuna for the first 2 batches. From Intake 29 onwards, the course is conducted entirely on site at Ratmalana.





Due to the requirement of a minimum critical mass of students to run a viable and sustainable Medical School, the Board of Management of the KDU decided to recruit academically eligible foreign students on a fee levying basis to complement the military students from the fourth batch (30<sup>th</sup>) intake onwards, subject to an upper limit of 100 students per batch.

There have been ten intakes up to date as a combination of military cadets and foreign civilian students. Up to the third intake, only male cadets were recruited. Subsequent intakes have included a significant number of female cadets as well. The MBBS degree programme is conducted by qualified and experienced academic and medical professionals. Details of the teachers at the FOM can be accessed at the KDU website ([www.kdu.ac.lk](http://www.kdu.ac.lk)).



The Faculty of Medicine

The educational activities in the first 3 semesters are confined to the FOM, KDU located in Ratmalana. From the 4<sup>th</sup> semester onwards, clinical training commences along with lectures. The Kotelawala Defence University Teaching Hospital (UH-KDU) was completed in 2017, which is located in Werahara. Most of the professorial clinical teaching and other relevant tertiary clinical teaching are now being carried out there. However, students also have access to many other state hospitals including the tri-service hospitals for their clinical clerkships as necessary.



The Ratmalana Medical Officer of Health (MOH) division has been made accessible to the KDU for the purpose of field training in community medicine. A family medicine clinic with communication skills training laboratory has been established at the UH-KDU. A few designated general practitioners have been identified for further exposure to family medicine. The clinical training in forensic medicine is being conducted at the office of the Judicial Medical Officer (JMO), Colombo South Teaching Hospital and Kalutara General Hospital.

The KDU was given the right to conduct a MBBS course which is registrable with the Sri Lanka Medical Council (SLMC) by an Act of Parliament in 2013. The Sri Lanka Medical Council having made a desk review of the submission made by the KDU made a site inspection in 2014 and granted full recognition to the MBBS course at KDU for the purpose of registration under section 29 of the Medical ordinance. So far, six (06) batches of medical graduates from KDU have completed their internship in state hospitals in Sri Lanka.

## **Facilities at the Faculty of Medicine**

The FOM building houses all the academic and administrative staff of the FOM, lecture halls, tutorial rooms, an auditorium, state of the art teaching and research laboratories, dissection room for anatomy, the anatomy museum, medical library, clinical skills laboratory and a student canteen. A multidisciplinary museum is also being developed and is available since 2016. Facilities for sports and recreation are available at the Ratmalana campus whilst the swimming pool is conveniently situated at the FOM premises.



## THE PRECLINICAL SCIENCES

The student will study the preclinical science subjects in the first three semesters. Preclinical Sciences include 3 subject areas, namely Anatomy, Biochemistry and Physiology. The curriculum is designed to introduce and facilitate the teaching and learning of the basic structure and function of the human.

The main assessment in the preclinical sciences program is the 2<sup>nd</sup> MBBS examination, held at the end of the 3<sup>rd</sup> semester assessing all 3 subjects. Additional in-course assessments will be held at the end of each semester, a percentage of the marks will be carried over to the final marks at the 2<sup>nd</sup> MBBS examination. The details of the in-course assessments and the 2<sup>nd</sup> MBBS examination are given under each subject.

A minimum of 80% attendance at all teaching activities including lectures, tutorials, small group discussions and laboratory training is required to be eligible to sit the 2<sup>nd</sup> MBBS examination. To pass a subject at the 2<sup>nd</sup> MBBS examination, the student should score a minimum of 40% in theory papers and obtain a minimum total aggregate of 50% for each subject. A candidate obtaining 70% or more in a subject in the first attempt will be awarded a distinction pass in that subject. However, it must be noted that the 2<sup>nd</sup> MBBS examination is a **barrier examination**. A student must pass this examination to proceed to the paraclinical sciences and clinical training. A student is given only four (4) attempts to pass this examination. Failure to pass this examination within four (4) attempts would lead to de-registration. Further details relevant to the preclinical course can be found in the faculty of medicine examination by-laws and regulations, which are given at the end of this document.

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## **ANATOMY**

**Duration of the course:** 3 semesters

Human anatomy is a branch of medical science dealing with the structure of the human body. This is taught through lectures and by dissection of cadavers. The term “anatomy” is derived from the ancient Greek term meaning “to dissect”. Human anatomy is considered as one of the basic essential sciences of medicine.

The discipline of anatomy is divided into macroscopic and microscopic anatomy. Macroscopic anatomy, or gross anatomy, is the examination of the human body parts using unaided eyesight. Gross anatomy also includes the branch of superficial or surface anatomy. On the other hand, microscopic anatomy or histology involves the use of instruments to study structure of the human body not visible to the naked eye. Human anatomy also encompasses both clinical and basic science disciplines including developmental anatomy, human genetics, neuroanatomy and radiology.



## Intended Learning Outcomes:

On completion of this course the student will

1. gain a sound knowledge of the normal disposition of the structure of the human body, commonly encountered variations in gross structure, functional and applied anatomy of the various organs as an essential prerequisite for solving clinical problems which, they will encounter in their future career as physicians.
2. be able to identify the microscopic structures of various cells, tissues and organs in the human body and correlate them with their functions as an important prerequisite to understand their altered state in various disease processes.
3. gain an understanding of the critical stages of normal development, the fundamentals of human genetics and the common genetic disorders.

## The Academic Programme

Subject Area	Teaching/Learning Method	Semester
<b>Gross anatomy</b>	Dissections – 260 hours Lectures – 40 hours Tutorials – 84 hours	1-3
<b>Clinical anatomy</b>	Lectures - 20 hours	1-3
<b>Histology</b>	Lectures – 28 hours Practical – 31 hours	1-3
<b>Neuroanatomy</b>	Lectures – 24 hours Practical – 12 hours	3
<b>Genetics</b>	Lectures - 20 hours	1,3
<b>Embryology</b>	Lectures – 34 hours	1-3

## Assessments

Three continuous assessments will be held at the end of the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> semesters. At the end of the 3<sup>rd</sup> semester, the 2<sup>nd</sup> MBBS examination will be held. All examinations will be conducted in accordance with Faculty of Medicine examinations by-laws.



### Continuous Assessment 1 (end of 1<sup>st</sup> semesters)

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS
MCQ	30	2 1/2
Spot		
Gross anatomy	20	
Histology	5	2

### Continuous Assessment 1 - supplementary

Method of Assessment	Duration	Marks allocated to 2 <sup>nd</sup> MBBS
Spot Viva	40 minutes	4 1/2

### Continuous Assessment 2 (end of 2<sup>nd</sup> semester)

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS
MCQ	30	2 1/2
SEQ		
Gross Anatomy	20	2
Histology	5	

### Continuous Assessment 2 - supplementary

Method of Assessment	Duration	Marks allocated to 2 <sup>nd</sup> MBBS
Spot Viva	40 minutes	4 1/2

### Continuous Assessment 3 (Neuroanatomy – end of 3<sup>rd</sup> semester)

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS
MCQ	10	1



### Continuous Assessment 3 – supplementary

Method of Assessment	Duration	Marks allocated to 2nd MBBS
Spot Viva	20 minutes	

### 2<sup>nd</sup> MBBS Examination

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS	Total marks allocated to 2 <sup>nd</sup> MBBS
MCQ	60	20	
SEQ	06	24	
Gross Anatomy spot	40	26	
Histology spot	10	10	
Viva- voce	7 minutes	10	
Total contribution to 2 <sup>nd</sup> MBBS examination			90
Continuous Assessment contribution			10
Total			100

### 2<sup>nd</sup> MBBS Supplementary Examination

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS	Total marks allocated to 2 <sup>nd</sup> MBBS
MCQ	60	25	
SEQ	6	25	
Gross Anatomy spot	40	30	
Histology spot	10	10	
Viva-voce	7 minutes	10	
Total			100



## **Recommended textbooks**

- Cunningham" s Manual of Practical Anatomy (i-iii)  
Romanes GJ  
(Latest edition)
- Grant" s  
Dissector Alan J.  
Latest Edition
- Clinical Anatomy  
Ellis H  
(Latest edition)
- Lasts Human Anatomy: Regional and Applied  
Chummy SSinnatamby  
(Latest edition)
- Clinical Neuroanatomy for Medical Students  
Snell RS  
(Latest edition)
- Wheater" s Functional Histology  
Young B, Lowe J, Stevens A, Heath J. &  
Deakin P (Latest edition)
- Langman" s Medical  
Embryology Sadler TW  
(Latest edition)

## **Supplementary Reading:**

- Grey" s Anatomy for Students  
Richard L Drake, A Wayne Vogl and Adam WM Micheal  
(Latest edition)
- An Introduction to Medical Genetics  
Roberts JAF  
(Latest edition)
- Grants atlas  
Ann MR Agur and Arthur F Dally  
(Latest edition)
- McMinns Clinical Atlas of Human Anatomy  
Peter HAbrahams  
(Latest edition)





## **BIOCHEMISTRY**

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**Duration of the course:** 3 semesters

Biochemistry is the study of the chemical basis of life; in other words, the chemistry of the living organism. A living organism is a collection of non-living molecules such as carbohydrates, lipids, proteins etc. and ions such as calcium, magnesium, zinc etc. Within the “body” of the organism, these non-living molecules and ions interact with one another in an organized and orderly manner to convert this “body” into a “living organism”. The study of these biomolecules and their interactions is Biochemistry. Biochemistry is the understanding of the chemical processes associated with “living” at the molecular level.

A study of these interactions under “normal” circumstances helps the student to understand “healthy” life. However, occasionally there are defects in these interactions brought about either due to genetic (hereditary) reasons or effects of environmental factors such as harmful chemicals or radiation. Such defects lead to disease. Some of them can be cured while others are terminal, leading to death. Knowledge of these defects enables the student to understand the reasons behind diseases. It also helps scientists to think of ways of correcting these defects.

This course is designed to cover the aspects of biochemistry relevant to medicine. A good knowledge of biochemistry enables a student to understand normal healthy life and disease at molecular level.

### **Intended Learning Outcomes**

On completion of this course the student will

1. have a basic overall knowledge of the important biomolecules found in the human body and their importance for health.
2. understand the basic metabolic pathways and their regulation to explain their role in life and how errors in them lead to disease.
3. understand the biochemical principles behind common tests used in diagnostics and be able to explain the abnormalities seen in laboratory reports in biochemical terms.



4. have a basic knowledge of the principles of human nutrition, nutritional requirements and common human nutritional deficiency diseases.
5. understand the basic principles for planning a suitable healthy diet for normal, obese and diabetic persons.
6. have a basic knowledge of the applications of molecular techniques in disease diagnosis and therapeutics.

## The Academic Programme

Subject area	Teaching/learning method	semester
<b>Cell structure and function</b>	Lectures – 2 hours Tutorials – 1 hours	1
<b>pH and buffers</b>	Lectures – 2 hours Tutorials – 1 hour Practical Classes – 3 hours	1
<b>Carbohydrates</b>	Lectures – 5 hours Tutorials – 1 hour Practical Classes – 3 hours	1
<b>Proteins</b>	Lectures – 5 hours Tutorials – 2 hours Practical classes – 3 hours	1
<b>Enzymes &amp; Inhibition</b>	Lectures – 3 hour Tutorials – 1 hour Practical classes – 3 hours	1
<b>Lipids</b>	Lectures – 4 hours Tutorials – 1 hour Practical classes – 3 hours	1
<b>Nucleic acids</b>	Lectures – 4 hours Tutorials – 1 hour Practical classes – 3 hours	1
<b>Information transfer</b>	Lectures – 3 hours Tutorials – 1 hour	1
<b>Haemoglobin</b>	Lectures – 5 hours Tutorials – 1 hour Practical classes – 3 hours	1
<b>Free radicals and antioxidants</b>	Lectures – 1 hour	1
<b>Digestion &amp; absorption</b>	Lectures – 2 hours Tutorials – 1 hour	1
<b>Carbohydrate metabolism</b>	Lectures – 7 hours Tutorials – 2 hours Practical classes – 3 hours	2
<b>Respiratory chain and oxidative phosphorylation</b>	Lectures – 1 hour	2



<b>Subject area</b>	<b>Teaching/learning method</b>	<b>semester</b>
<b>Protein metabolism</b>	Lectures– 4 hours Tutorials– 1hour Practical classes – 3 hours	2
<b>Lipid metabolism</b>	Lectures – 7 hours Tutorials – 2 hours Practical classes – 3 hours	2
<b>Bilirubin metabolism</b>	Lectures– 3 hours Tutorials– 1hour Practical classes – 3 hours	2
<b>Nucleic acid metabolism</b>	Lectures – 4 hours Tutorials – 1 hour	2
<b>Integration of metabolism</b>	Lectures – 2 hours	2
<b>Diabetes mellitus</b>	Lectures – 3 hours Tutorials – 1 hour	2
<b>Liver metabolism</b>	Lectures – 3 hours Tutorials – 1 hour	2
<b>Inborn errorsof metabolism</b>	Lectures – 3 hours Tutorials – 1 hour	2
<b>Molecular techniques in medicine</b>	Lectures– 5 hours Tutorials– 1hour Practical classes – 3 hours	2
<b>Micronutrients</b>	Lectures – 3 hours Tutorials – 1 hour	2
<b>Foods and diets</b>	Lectures – 4 hours Tutorials – 1 hour Practical classes – 3 hours	3
<b>Principles of nutrition</b>	Lectures – 7 hours Tutorials – 1 hour Practical classes – 3 hours	3
<b>Vitamins</b>	Lectures – 5 hours Tutorials – 2 hours Practical classes – 3 hours	3
<b>Hormone action</b>	Lectures – 4 hours Tutorials – 1 hour	3
<b>Basic clinical biochemistry</b>	Lectures– 10 hours Tutorials– 5hours Practical classes – 3 hours	3
<b>Plasma proteins</b>	Lectures– 2 hours Tutorials– 1hour	3
<b>Cancer &amp; aging</b>	Lectures– 2 hours Tutorials– 1hour	3



## Assessments

Two continuous assessments will be held at the end of each semester. At the end of the 3<sup>rd</sup> semester, the 2<sup>nd</sup> MBBS examination will be held.

### Continuous Assessments 1 & 2 (end of 1<sup>st</sup> and 2<sup>nd</sup> semester)

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS	Total marks allocated to 2 <sup>nd</sup> MBBS
MCQ	20	2	(2x2) 4
SEQ	2	2	(2x2) 4
Spots	5	1	(1x2) 2
<b>Total</b>			<b>10</b>

### Continuous Assessments 1 & 2 (Supplementary)

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS	Total marks allocated to 2 <sup>nd</sup> MBBS
SEQ	2	5	(5x2) 10
<b>Total</b>			<b>10</b>

### 2<sup>nd</sup> MBBS Examination

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS	Total marks allocated to 2 <sup>nd</sup> MBBS
MCQ	40	30	
SEQ	6	30	
Spots	20	20	
Viva-voce	7 minutes	10	
<b>Contribution to 2<sup>nd</sup> MBBS</b>			<b>90</b>
<b>Continuous Assessment contribution</b>			<b>10</b>
<b>Total</b>			<b>100</b>



## 2<sup>nd</sup> MBBS Supplementary Examination

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS	Total marks allocated to 2 <sup>nd</sup> MBBS
MCQ	40	35	
SEQ	6	35	
Spots	20	20	
Viva-voce	7 minutes	10	
Total			100

### Recommended text books:

- Lippincott's Illustrated Reviews  
– Biochemistry  
Harvey RA (ed)  
7th edition, 2017,  
Lippincott Williams & Wilkins, Philadelphia.
- Harper's Illustrated  
Biochemistry  
Murray R, Rodwell V, Bender D, Botham KM, Weil AP, Kennelly PJ 31st  
edition, 2018  
McGraw – Hill Medical, New York.
- Nutrition through the lifecycle  
Wickramanyake TW
- Textbook of Biochemistry with Clinical Correlation,  
Devlin TM  
7th edition, 2011  
John Wiley & Sons, New York.



# PHYSIOLOGY

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**Duration of the course:** 3 semesters

The subject of human physiology - the study of the function of the human body – is fundamental to the study of medicine.

It is the dynamic interplay of processes that keep the body in „normal“ function. It is a study of the processes that are involved in the interaction between the

„external“ environment and the „internal“ environment of the body. For convenience, we will be studying our body in a system-based approach separating, for instance, the cardiovascular system from the respiratory system. The maintenance of the natural equilibrium of our body is learnt by understanding the principle of homeostasis.

## Intended Learning Outcomes

On completion of this course the student will

1. acquire the knowledge related to the normal function of the human body.
2. describe the pathophysiological basis of disordered functions of the human body.
3. acquire the necessary practical skills relevant to human physiology at the preclinical level.
4. critically analyse the physiological concepts in health and their derangements in disease.



## The Academic Programme

<b>Subject Area</b>	<b>Teaching/Learning Method</b>	<b>Semester</b>
<b>Biological measurements, Homeostasis Introduction to statistics,</b>	Lectures – 6 hours Practical classes – 2 hours	1
<b>cell communication, cellular transport Body fluids dehydration</b>	Lectures – 4 hours Tutorials/ SGD – 2 hours Practical classes – 2 hours	1
<b>Introduction to the Autonomic Nervous System, Excitable tissues</b>	Lectures – 8 hours Tutorials/ SGD – 2 hours	1
<b>Blood and Immunity</b>	Lectures – 13 hours Tutorials/ SGD – 4 hours Practical classes – 6 hours	1
<b>Cardiovascular Physiology</b>	Lectures– 23 hours Tutorials/ SGD – 8 hours Practical classes – 6 hours	1
<b>Respiratory Physiology</b>	Lectures– 18 hours Tutorial/ SGD–6 hours Practical classes – 4 hours	1
<b>Gastrointestinal Physiology</b>	Lectures– 20 hours Tutorial/ SGD–4 hours Practical classes – 4 hours	2
<b>Renal Physiology</b>	Lectures– 12 hours Tutorial/ SGD–4 hours Practical classes – 4 hours	2
<b>Endocrine Physiology</b>	Lectures– 17 hours Tutorial/ SGD–4 hours Practical class – 2 hours	2
<b>Reproductive Physiology</b>	Lectures– 15 hours Tutorial/ SGD–2hours Practical classes – 3 hours	2
<b>Neurophysiology</b>	Lectures– 48 hours Tutorial/ SGD–6hours Practical classes – 12 hour	3
<b>Miscellaneous</b>	Lectures – 6 hours	3





## Assessments

Two continuous assessments will be held at the end of the 1<sup>st</sup> and 2<sup>nd</sup> semesters. At the end of the 3<sup>rd</sup> semester, the 2<sup>nd</sup> MBBS examination will be held.

### Continuous Assessment 1 (end of 1<sup>st</sup> semester)

Method of Assessment	No of Questions	Marks Allocated to 2 <sup>nd</sup> MBBS
BRQs + MRQs	05 + 15	3
SEQs	2	3
OSPE	10	2
Total		8

### Continuous Assessment 2 (end of 2<sup>nd</sup> semester)

Method of Assessment	No of questions	Marks Allocated to 2 <sup>nd</sup> MBBS
BRQs + MRQs	05 + 15	5
SEQs	2	5
OSPE	10	2
Total		12

## Supplementary Assessments

### Continuous Assessment 1

Method of Assessment	No of Questions	Marks Allocated to 2 <sup>nd</sup> MBBS
SEQs	2	6
Viva voce	10 minutes	2
Total		8

## Continuous Assessment 2

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS
SEQs	2	8
Viva voce	10 minutes	4
<b>Total</b>		<b>12</b>

## 2<sup>nd</sup> MBBS Examination

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS	Total marks allocated to 2 <sup>nd</sup> MBBS
BRQs	10	25	
MRQs	40		
SEQs	5	25	
OSPE	25	20	
Viva voce	10 minutes	10	
			80
<b>Continuous Assessment</b>			20
<b>Total</b>			<b>100</b>

## 2<sup>nd</sup> MBBS Supplementary Examination

Method of Assessment	No of questions	Marks allocated to 2 <sup>nd</sup> MBBS	Total marks allocated to 2 <sup>nd</sup> MBBS
BRQs	10	30	
MRQs	40		
SEQs	05	30	
OSPE	25	30	
Viva voce	10 minutes	10	
<b>Total</b>			<b>100</b>



### **Recommended textbooks:**

- Ganong" s Review of Medical Physiology, Barrett KE, Barman SM, Boitano S, Heddwen BL 24<sup>th</sup> edition 2012 or latest edition, McGraw-Hill. New York.
- Textbook of Medical Physiology, Hall JE, Latest edition, Elsevier Science Health science division. Philadelphia.
- Hutchinson" s Clinical Methods,
- Glynn M, Drake W (eds) Latest edition, Saunders Ltd, Philadelphia.



## **THE PARA-CLINICAL SCIENCES**

The Department of Para-clinical Sciences is one of the three departments of the Faculty of Medicine. The students who successfully complete the Second MBBS Examination will study the Para-clinical Sciences subjects from the 4<sup>th</sup> to 7<sup>th</sup> semesters. The subjects of Microbiology and Parasitology are taught in semesters 4 and 5, the subjects Pharmacology, Pathology, Public Health and Family Medicine are taught from semesters 4 to 7 and Forensic Medicine from Semesters 5 to 7. The department conducts two examinations, the Third MBBS Part I and Third MBBS Part II Examinations at the end of semesters 5 and 7 respectively. Microbiology and Parasitology will be assessed at the Third MBBS Part I Examination and the remaining subjects will be assessed at the Third MBBS Part II Examination.

To pass any of the subjects, the student should score a minimum of 45% in the theory component and obtain a minimum aggregate of 50% for the whole subject. A candidate obtaining 70% or more in a subject in the first attempt will be awarded a distinction pass in that subject.

### **PARASITOLOGY**

**Duration of the course:** 2 semesters

The Parasitology course primarily teaches about human parasites and the diseases caused by them. The main objective of the course is to acquire basic knowledge and skills to identify, diagnose, manage, prevent and control parasitic diseases found mainly in Sri Lanka. During the course students will learn about the parasites as disease causing agents, their prevalence and geographical distribution, basic morphology, life cycle, modes of transmission, vectors, pathology and clinical symptoms of the diseases, collection of specimens and diagnosis of the parasitic diseases, basic management steps of the patients, anti-parasitic drugs that can be used effectively in treatment, prevention and control of the parasitic diseases. Further, students will learn about arthropod vectors that are capable of transmitting parasitic diseases to humans and parasitic zoonoses. In addition to the parasitic diseases, during the course, students will learn particularly about venomous snakes in Sri Lanka, their identification and management of snakebites.



## **Intended Learning Outcomes**

On completion of this course the student will be able to,

1. (a) acquire knowledge and develop skills to diagnose and treat the parasitic diseases commonly found in Sri Lanka  
  
(b) educate the general public regarding the preventive measures of the above diseases.
2. be aware of other medically important parasitic diseases in the world and possibility of these immigrating in Sri Lanka.
3. to have some understanding of the economic loss in a country which could be brought about by widespread parasitic disease.
4. acquire knowledge about parasitic infections in an immunocompromised patient.
5. acquire knowledge about medically important arthropods and their control with special reference to disease in Sri Lanka caused or transmitted by these arthropods.
6. (a) be skilled in identification of poisonous snakes found in Sri Lanka and the clinical manifestations resulting from bites by them, and the management of such patients.  
  
(b) be able to recognize common non-poisonous snakes found in Sri Lanka specially the ones which mimic the poisonous snakes.



## The Academic Programme

Subject Area	Teaching/Learning Method	Semester
<b>Intestinal and tissue nematodes</b>	Lectures – 20 hours Tutorials/ SGD – 3 hours Practical classes – 9 hours	4
<b>Intestinal protozoans</b>	Lectures – 5 hours Tutorials/ SGD – 1 hour Practical classes – 3 hours	4
<b>Blood and tissue protozoans</b>	Lectures – 13 hours Tutorials/ SGD – 4 hours Practical classes – 6 hours	4 & 5
<b>Cestodes and Trematodes</b>	Lectures – 7 hours Tutorials/ SGD – 2 hours Practical classes- 2 hours	5
<b>Medically important arthropod vectors/ Entomology</b>	Lectures – 8 hours Tutorials – 1 hour Practical classes – 3 hours	5
<b>Parasitic Zoonoses</b>	Lectures – 2 hours Tutorials – 1 hour	5
<b>Medically important Snakes of Sri Lanka</b>	Lectures – 3 hours Tutorials – 1 hour Practical classes – 2 hours	5

## Assessments

One continuous assessment and the 3<sup>rd</sup> MBBS Part I examination will be conducted. Three components of the continuous assessment will be held at the end of the 4<sup>th</sup> and middle of the 5<sup>th</sup> semesters. 3<sup>rd</sup> MBBS Part 1 examination will be conducted at the end of 5<sup>th</sup> semester.



## Continuous Assessment 1

Method of assessment	Number of questions	Marks allocated to 3 <sup>rd</sup> MBBS
15 MCQs (True /False type) + 05 BRQs Best Response type)*	20	10
Practical 1* – examination of faeces	01	05
Practical 2** – Blood smear examination for malaria parasites	02	05
<b>Total</b>		<b>20</b>

\* Components will be held at the end of the 4<sup>th</sup> semester

\*\* Components will be held at the middle of the 5<sup>th</sup> semester

## Third MBBS part 1 Examination

Method of assessment	Number of questions	Marks allocated to 3 <sup>rd</sup> MBBS Part 1
MCQs 24 + BRQs 06	30	25
SEQs (Short Essay Questions)	04	30
OSPE (02 min each)	20	20
Viva (8 min)		05
<b>Total</b>		<b>80</b>
<b>Contribution from continuous assessment</b>		<b>20</b>
<b>Total</b>		<b>100</b>



### Supplementary Examination for Continuous Assessment

Method of assessment	Number of questions	Marks allocated to 3 <sup>rd</sup> MBBS Part 1
15 MCQs (True /False Type) + 05 BRQs (Best Response Type)	20	10
Practical 1 – examination of faeces	01	05
Practical 2 – Blood smear examination for malaria parasites	02	05
<b>Total</b>		<b>20</b>

### Supplementary Examination for 3<sup>rd</sup> MBBS Part 1 Exam

Method of assessment	Number of questions	Marks allocated
MCQs 24 + BRQs 06	30	35
SEQs (Short Essay Questions)	04	40
OSPE (02 min each)	20	20
Viva (8 min)		05
<b>Total</b>		<b>100</b>





### **Recommended textbooks:**

- Manson's Tropical Diseases Cook GC, Alimuddin IZ  
23<sup>rd</sup> edition, 2015  
Saunders Elsevier, Philadelphia.
- Medical Parasitology 4<sup>th</sup> Edition  
DR Arora, BrijBala Arora  
CBS Publishers & Distributors
- Website of the Centre for Disease Control and Prevention [www.cdc.gov](http://www.cdc.gov)

### **Supplementary Reading**

- WHO publications: Technical Report Series
  - Lymphatic Filariasis
  - Parasitic Zoonoses
  - Intestinal Protozoans & Helminthic infections
  - Management of Acute Malaria
  - Control of Lymphatic Filariasis
  - Hookworm Infection and Anaemia
  - Drugs used in Parasitic Diseases

Publications and technical reports by the Anti Malaria Campaign, Anti Filariasis Campaign  
Dengue Control Unit and Epidemiology Unit of the Ministry of health. Sri Lanka.

Entomology for Students of Medicine  
RM Gordon and MMJ Lavoipierre

Atlas of Medical Helminthology & Protozoology  
HC Jeffrey and H Crozier

Worms and Human Disease  
R Muller



## **MICROBIOLOGY**

**Duration of Course:** 2 semesters

Microbiology is the study of microorganisms (bacteria, fungi and viruses) and the infectious diseases caused by them. During this course, the students will learn about infectious diseases including organisms, transmission of infection, diagnosis, antimicrobial treatment and prevention. The learning of Microbiology should go hand in hand with clinical work in the hospital wards. The students should be able to relate the knowledge learnt in the classroom to cases of infectious diseases that are seen and discussed in the wards.

Students will have a total of 2 - 3 hours of contact time per week with the staff. These are distributed among the various teaching learning activities such as lectures, tutorials, and laboratory practical training and demonstrations.

In the 4<sup>th</sup> semester, the students will learn in general microbiology the structure and function of bacteria, virulence factors and host parasite relationship in health and disease; in immunology, the immunity to infections and abnormal immune responses. In bacteriology, students will learn the common bacteria that cause infections, how they are transmitted, clinical manifestations, how they are diagnosed and treated.

In the 5<sup>th</sup> semester, students will learn viral and fungal infections, infections of systems (e.g. respiratory, urinary tract infections etc.) and how they are diagnosed and treated.

### **Intended Learning Outcomes**

On completion of this course the student will be able to

1. describe the pathogenic microorganisms that are commonly encountered (bacteria, viruses and fungi) and their habitats, routes of transmission, pathogenesis of infections and clinical signs and symptoms of the infections.
2. select appropriate antimicrobial agents that can be used in treatment and in prophylaxis of infectious diseases.
3. describe briefly the microbiological diagnosis of infectious diseases including appropriate laboratory tests.
4. advise on collection and transport of specimens for microbiological investigations.



5. explain measures that can be taken for the prevention and control of infectious diseases including immunization.
6. select the antiseptics, disinfectants and sterilizing agents appropriate for use in patient care and in the laboratory.
7. explain the basic principles of infection prevention and control in the hospital and hospital acquired infections.

### The Academic Programme

Subject Area	Teaching/Learning Method	Semester
<b>General Microbiology</b>	Lectures – 3 hours Tutorials – 1 hour Practical classes – 2 hours	4
<b>Disinfection and Sterilization</b>	Lectures – 45 Minutes Tutorial/ Practical Classes – 45 Minutes	4
<b>Immunology</b>	Lectures – 6 hours Tutorials – 1 hour	4
<b>Bacteriology</b>	Lectures – 17 hours Tutorials – 3 hours Practical Classes – 5 hours	4
<b>Antibiotics</b>	Lectures – 2 hours Tutorials – 1 hour	4
<b>Virology</b>	Lectures – 14 hours Tutorials – 3 hours Practical Classes – 2 hours	5
<b>Mycology</b>	Lectures – 2 hours Tutorials – 1 hour Practical Classes – 2 hours	5
<b>Systemic Infections</b>	Lectures – 14 hours Tutorials – 4 hours Practical Classes – 8 hours	5
<b>Basic Principles on Hospital Infection Control</b>	Lectures/ Workshops - 2.5 hours	4



## Assessments

Assessments will constitute of 01 continuous assessment at the end of 4<sup>th</sup> semester which will carry a total of 20% marks to the 3<sup>rd</sup> MBBS Part I Examination which will be conducted at the end of the 5<sup>th</sup> semester.

### Continuous Assessment 1

Method of Assessment	Number of Questions	Marks Allocated	Total
MCQ 15 + BRQ 5	20	10	
OSPE	10	10	
Total			20

### 3<sup>rd</sup> MBBS Part I Examination

Method of Assessment	Number of Questions	Marks Allocated	Total
SEQ	04	30	
MCQ 24 + BRQ 6	30	25	
OSPE (3min each)	20	20	
Viva (8min)		05	
			80
CAT 1			20
Total			100

### 3<sup>rd</sup> MBBS Part I Supplementary Examination

Method of Assessment	Number of Questions	Marks Allocated	Total
MCQ 24 + BRQ 6	30	35	
SEQ	04	40	
OSPE (3min each)	20	20	
Viva (8min)		05	
Total			100



## **Recommended text books**

2. Medical Microbiology by David Greenwood, Richard C.B. Slack & John F. Peutherer. 19<sup>th</sup> Edition. Churchill Livingstone
3. Mims' Medical Microbiology by Richard Goering, Hazel Dockrell, Mark Zuckerman, Derek Wakelin, Ivan Roitt, Cedreic Mims. 5<sup>th</sup> Edition, Mosby Elsevier
4. Basic Immunology, Functions and Disorders of the Immune System, Abul Abbas Andrew Lichtman Shiv Pillai, 6<sup>th</sup> Edition.
5. Cellular and Molecular Immunology by Abbas AK, Lichtman AH. 8<sup>th</sup> Edition, Saunders Publishing



## **PATHOLOGY**

**Duration of the course:** 4 semesters

Pathology is the scientific study of disease. It is a field that bridges clinical practice with the basic sciences. Pathology encompasses a wide subject area and is therefore sub categorized into the disciplines of histopathology, hematology and chemical pathology.

Histopathology is the study of the macroscopic and microscopic changes in diseased tissue. Hematology deals with the study of the components of blood, their functions and related disorders. Chemical pathology deals with biochemical changes in blood and body fluids (electrolytes, enzymes and proteins etc.) and its association.

During the 4<sup>th</sup> semester, students will start histopathology with general and tumour pathology. General pathology is concerned with the basic reactions of cells and tissues to abnormal stimuli that underlie all diseases. Tumour pathology will introduce the student to the study of tumour characteristics, its clinical manifestations and investigations. They will also get a brief overview of carcinogenesis.

During the 5<sup>th</sup> semester students will start and complete chemical pathology and start systemic pathology with the respiratory and cardiovascular systems.

The 6<sup>th</sup> semester will comprise all the lectures scheduled for hematology and a continuation of the lectures on systemic pathology.

During the 7<sup>th</sup> semester students will complete their lectures on the remaining organ systems.



## The Academic Programme

Subject Area	Teaching/Learning Method	Semester
<b>General Pathology</b>	Lectures – 20 hours Tutorials/ SGD – 4 hours Practicals – 5 hours	4
<b>Tumour Pathology</b>	Lectures – 10 hours Tutorials/ SGD – 2 hours Practicals – 2 hours	4
<b>Chemical Pathology</b>	Lectures – 10 hours Tutorials/ SGD – 1 hour Practicals- 5 hours	5
<b>Respiratory Pathology</b>	Lectures – 8 hours Tutorials – 1 hour Practicals – 2 hours	5
<b>Cardiovascular Pathology</b>	Lectures – 8 hours Tutorials – 1 hour Practicals – 2 hours	5
<b>Hematology</b>	Lectures – 15 hours Tutorials – 4 hours Practicals – 2 hours	6
<b>Gastrointestinal Pathology</b>	Lectures – 8 hours Tutorials – 1 hour Practicals – 2 hours	6
<b>Hepatobiliary Pathology</b>	Lectures – 6 hours Tutorials – 1 hour Practicals – 1 hour	6
<b>Pathology of the Reticulo- endothelial System</b>	Lectures – 2 hours	6
<b>Bone Pathology</b>	Lectures – 2 hours	7
<b>Breast Pathology</b>	Lectures – 2 hours Tutorials – 1 hour Practicals – 1 hour	7
<b>Thyroid Pathology</b>	Lectures – 2 hours Tutorials – 1 hour Practicals – 1 hour	7
<b>Pathology of the Female Genital Tract</b>	Lectures – 4 hours Tutorials – 1 hour Practicals – 1 hour	7



Subject Area	Teaching/Learning Method	Semester
<b>Pathology of the Male Genital Tract</b>	Lectures – 1 hour Practicals – 1 hour	7
<b>Renal Pathology</b>	Lectures – 6 hours Tutorials – 1 hour Practicals – 1 hour	7
<b>Pathology of the Central Nervous System</b>	Lectures – 4 hours Tutorials – 1 hour Practicals – 1 hour	7
<b>Clinical Pathology</b>	Histopathology - 1 week Chemical Pathology – 1 week Haematology – 1 week Blood Bank – 1 week	Appointments will be scheduled within the 6 <sup>th</sup> and 7 <sup>th</sup> semester.

## Intended Learning Outcomes

### Histopathology

On completion of this course the student will be able to

- 1) demonstrate a disease related vocabulary.
- 2) describe the different cellular responses to injury and stress.
- 3) describe the morphological changes in tissues associated with disease processes.
- 4) explain the relationship between altered morphology and abnormal function.
- 5) describe the characteristics of benign and malignant neoplasms.
- 6) explain the basic steps in carcinogenesis.
- 7) list the types of specimen sent to the histopathology laboratory.
- 8) describe the procedure involved in sending different specimens to the histopathology laboratory.
- 9) explain the clinical significance of cytopathology and histopathology tests used in the diagnosis and management of systemic disorders.





## **Chemical Pathology**

On completion of this course the student will be able to

- 1) Explain the pathological basis of biochemical alterations observed in plasma and body fluids in common systemic disorders.
- 2) Select appropriate biochemical investigations to confirm the diagnosis of diseases and monitor management where applicable.
- 3) Describe the principles of test requisition, patient preparation, sample collection and transport requirements related to common general and specialized biochemical investigations
- 4) Interpret the results of biochemical tests, in the context of the overall clinical picture of the patient.

## **Haematology**

On completion of this course the student will be able to

- 1) explain basics of haemopiesis and function of mean blood celltypes.
- 2) describe the normal process of haemostauris.
- 3) describe the inherited and acquired mechanisms of disease processes involving the cellular components (red cells, whitecells, platelets) and plasma components of blood.
- 4) describe inherited and acquired mechanisms of diseases related to the coagulation system.
- 5) describe the principles of test requisition, patient preparation, sample collection and transport requirements for haematologicalandblood bank investigations.
- 6) describe the common diagnostic tests done in the haematology and bloodbank laboratories.
- 7) interpret the results of haematological and blood bank tests, in the context of theoverall clinical picture of the patient.
- 8) outline management if common haematological disorders pertaining to redcells, white cells, platelets, coagulation and transfusion.
- 9) briefly discuss about blood products and its therapeutic applications andblood donation.
- 10) describe stem cell and organ transplantation and relevance of Human Histocompatibility Antigen system.



## Assessments

Three continuous assessments will be held at the end of semester 4,5 and 6.  
At the end of the 7<sup>th</sup> semester the 3<sup>rd</sup> MBBS part 2 Examination will be held.

### Continuous Assessments 1, 2 and 3

Method of assessment	No. of questions	Marks allocated to 3 <sup>rd</sup> MBBS	Total marks allocated to 3 <sup>rd</sup> MBBS
MCQ + BRQ	(15+5) 20	5	
Total			(3X5) 15

### 3<sup>rd</sup> MBBS Part 2 Examination

Method of assessment	No. of questions	Marks allocated to 3 <sup>rd</sup> MBBS	Total marks allocated to 3 <sup>rd</sup> MBBS
MCQ & BRQ	(32+8) 40	20	
SEQs	4	40	

### 3<sup>rd</sup> MBBS Part 2 Supplementary Examination

Method of Assessment	No. of questions	Marks allocated to 3 <sup>rd</sup> MBBS	Total marks allocated to 3 <sup>rd</sup> MBBS
MCQ & SBR	(32+8) 40	30	
SEQ	4	40	
OSPE	15	20	
Viva		10	
Total marks			100



## **Recommended textbooks:**

- Robbins Basic Pathology  
Editors - Kumar V, Abbas A, Aster J,  
Robbins SL 10<sup>th</sup> edition, 2017
- Essential Hematology  
Hoffbrand AV, Pettit JE & Moss A  
Victor Hoffbrand, David P Steensma  
PAH 8<sup>th</sup> edition, 2019  
Blackwell Publishing, Oxford  
Wiley - Blackwell
- Clinical Chemistry  
9<sup>th</sup> edition 2020 Marshall WJ,  
Lapsley M, Day A, Shipman K Elsevier



## CLINICAL PHARMACOLOGY AND THERAPEUTICS

**Duration of course:** 4 semesters

Pharmacology comes from the Greek word *pharmacon* (drug) and *logia* (study) and provides the scientific basis of drug action at the cellular, biochemical and molecular level. Therapeutics links the combined knowledge of disease and how medicines (drugs) affect it. Doctors of all specialties prescribe medicines on a daily basis and this could be one of the most important but also one of the most dangerous activities of a doctor.

Clinical pharmacology and therapeutics is an important part of the MBBS curriculum because understanding the principles of clinical pharmacology and therapeutics is important for safe, effective and rational prescribing.

The aim of the discipline of clinical pharmacology and therapeutics is to provide the core knowledge to link the interaction of medicines at the cellular, biochemical and physiological level to a range of beneficial and adverse effects seen in therapeutic use and to the skills to be fulfilled in the prescribing process.

### **Intended Learning Outcomes**

On completion of this course the student will be able to

1. have a sound understanding of the basic principles of clinical pharmacology.
2. link their knowledge of pharmacokinetics and pharmacodynamics to safe and effective prescribing both in the normal and special situations.
3. have the knowledge to understand Essential therapeutic problems in the context of Sri Lanka and 21<sup>st</sup> century clinical practice.
4. have the basic knowledge to recognize and explain adverse drug reactions, drug – drug, and food - drug interactions.
5. understand the importance of the essential medicines list (EML), its specific uses and have the skill to select medicines for the EML.



6. with regards to pharmacological research
  - a) be aware of the processes and ethical issues involved in pharmaceutical research.
  - b) plan a clinical research based on the PICO model/consort guidelines.
  - c) critically appraise clinical trial/meta analysis data to extrapolate therapy to correct populations.
7. describe and explain the chemistry, pharmacokinetics, pharmacodynamics, clinical uses, side effects, cautions and contraindications of commonly used medicines in the EML.
8. have the knowledge and skills in:
  - a) defining patient's problems (diagnosis);
  - b) defining effective and safe treatments (drug and non-drug treatments);
  - c) selecting the right medicine, at the right dose, by the right route, at the right time, for the right duration for the right person at the lowest cost to the person and the community with the best available evidence
  - d) writing a clear prescription;
  - e) giving patients adequate information and counseling;
  - f) planning and evaluating treatment responses.
9. understand the concept of pharmacoeconomics
10. possess a sound knowledge of all emergency medicines used in paediatric and adult clinical practice
11. have a basic knowledge on emerging new therapies
  - a) Cancer chemotherapy
  - b) Biological therapies
  - c) Regenerative therapies



## The Academic Programme

Subject Area	Teaching/Learning Method	Sem ester
<b>General pharmacology</b>	Lectures – 31 hours Tutorials – 12 hours Fixed Learning Module – 4 hours	4
<b>Drugs affecting the autonomic nervous system</b>	Lectures – 4 hours Tutorials/ SGD – 2 hours	4
<b>Drugs affecting the cardiovascular system</b>	Lectures – 12 hours Tutorials/ SGD – 3 hours	5
<b>Drugs used in treatment of respiratory disorders</b>	Lectures – 3 hours Tutorials/ SGD – 2 hours Skills sessions – 2 hours	5
<b>Antimicrobial agents</b>	Lectures – 17 hours Tutorials/ SGD – 4 hours	5
<b>Drugs affecting gastrointestinal function</b>	Lectures – 5 hours	5
<b>Drugs affecting hematopoiesis</b>	Lectures – 3 hours	5
<b>Drugs affecting the endocrine system</b>	Lectures – 18 hours Tutorials – 6 hours	6
<b>Drugs affecting the central nervous system</b>	Lectures – 16 hours Tutorials – 5 hours	6
<b>Drugs used in dermatology, disorders of the ear, nose and throat</b>	Lectures – 2 hours	6
<b>Newer therapies</b>	Lectures – 2 hours	7
<b>Pharmacoeconomics</b>	Lectures – 2 hours	7
<b>Therapeutics and toxicology</b>	Lectures – 45 hours Presentation – 2 hours	7



## Assessments

Three continuous assessments will be held at the end of semesters 4,5 and 6. At the end of the 7<sup>th</sup> semester, the 3<sup>rd</sup> MBBS part 2 Examination will be held.

### Continuous Assessment 1

Method of Assessment	No of questions	Marks allocated to 3 <sup>rd</sup> MBBS	Total marks allocated to 3 <sup>rd</sup> MBBS
MCQ & SBR	(15 +5) 20	5	
SEQs	2	5	
Total			10

### Continuous Assessment 2 & 3

Method of Assessment	No of questions	Marks allocated to 3 <sup>rd</sup> MBBS	Total marks allocated to 3 <sup>rd</sup> MBBS
MCQ & SBR	(15 +5) 20	5	
Total			(5x2) 10

### 3<sup>rd</sup> MBBS Part 2 Examination

Method of assessment	No. of questions	Marks allocated to 3 <sup>rd</sup> MBBS	Total marks allocated to 3 <sup>rd</sup> MBBS
MCQ & SBR	(20+20) 40	30	
SEQs	4	30	
OSPE	10	15	
Viva		5	
Contribution to 3 <sup>rd</sup> MBBS			80
Continuous Assessment contribution			20
Total			100



### 3<sup>rd</sup> MBBS Part 2 Supplementary Examination

Method of assessment	No. of questions	Marks allocated to 3 <sup>rd</sup> MBBS	Total marks allocated to 3 <sup>rd</sup> MBBS
<b>MCQ &amp; SBR</b>	(20+20) 40	40	
<b>SEQs</b>	4	40	
<b>OSPE</b>	10	15	
<b>Viva</b>		5	
<b>Total marks</b>			<b>100</b>

#### Recommended textbooks:

- Rang and Dale's Pharmacology  
Rang HP, Dale MM, Ritter JM, Flower RJ & Henderson G 7<sup>th</sup> edition, 2012  
Elsevier Churchill Livingstone, London.
- Clinical Pharmacology  
Bennett PN, Brown MJ, Sharma P 11<sup>th</sup> edition, 2012  
Elsevier Churchill Livingstone, London.

#### Recommended reading for clinical attachments

- British National Formulary. BMJ group and pharmaceutical Press. Latest ed.
- Australian Prescriber





## **Supplementary reading**

- Goodman and Gilman's the Pharmacological basis of Therapeutics Katzung BG, Trevor J 12<sup>th</sup> Edition, 2011 McGraw Hill, New York
- Sri Lankan Prescriber



## **FORENSIC MEDICINE AND TOXICOLOGY**

### **Duration of Course: 3 Semesters**

Forensic Medicine is one of the oldest and independent streams of medical practice. The terms Forensic Medicine, Legal Medicine, Medical Jurisprudence, are of almost similar meaning, and interchangeably used to introduce different angles of the discipline. The main function of Forensic Medicine is to fulfill medical needs of the legal system in the country by filling the gap between medicine and the law. However, one should understand that Forensic Medicine is based on research and scientific advancements whereas, law is a social art which reflects and controls accepted norms of the social order specific to particular socio-political system at a given time. The subject areas of Forensic Medicine consist of clinical forensic medicine, forensic pathology, forensic science, forensic anthropology, law and ethics etc.

This course aims at providing students with the knowledge to undertake medico-legal responsibilities in the practice of medicine and also includes criminology and its related medico-legal problems. The knowledge of the law in relation to medical practice, medical negligence and a course on medical ethics are also included.

### **Intended Learning Outcomes**

On completion of this course the student will be able to

1. identify the basic concepts of medico-legal practice pertaining to health and defense services of the Sri Lanka.
2. make observations and interpret findings at post mortem examinations and clinical forensic investigations covering vast spectrum of cases of medico-legal interest including mechanical trauma, intoxications, occupational hazards, sexual crimes and natural diseases.
3. complete relevant medico-legal reports including post mortem report, medico legal examination form, medico-legal report etc. and submit them to law enforcement authorities.
4. observe and practice the principles of medical ethics in the practice of the medical profession.
5. display the personal attributes of compassion, honesty, and integrity in relationships with patients-victims, police, judiciary, colleagues, families, communities and the medical profession.



6. exhibit a capacity for self-evaluation, moral reflection and ethical reasoning to form the basis for a self-directed, lifelong engagement in the profession.

### The Academic Programme

Subject Area	Teaching/Learning Method	Semester
<b>Legal and ethical aspects of medical practice</b>	Lectures – 12 hours Tutorials – 2 hours	5
<b>Introduction to forensic medicine and mechanical injuries / injury patterns</b>	Lectures – 14 hours Tutorials – 2 hours Demonstrations – 3 hours	5
<b>Toxicology [agrochemicals, plant poisons, heavy metals, snake bites, narcotics]</b>	Lectures – 14 hours Tutorials – 1 hour Demonstrations – 1 hour	5/6
<b>Deaths due to asphyxia, mechanical trauma and natural causes, and its medico-legal importance</b>	Lectures – 20 hours Tutorials – 2 hours Demonstrations – 2 hours	6
<b>Sexual offences, child abuse, RTA, maternal deaths and infanticide</b>	Lectures – 18 hours Tutorials – 2 hour Demonstrations– 4 hours	7
<b>Clinical training</b>	2 weeks	6/7



## Assessments

Continuous Assessments 1 & 2 (Semesters 5 and 6), Clinical Forensic Medicine Evaluation (Semester 7)

Method of assessment	No of questions	Marks allocated to 3 <sup>rd</sup> MBBS
<b>MCQ &amp; BRQ</b>	(16 : 4) 20	(5 x 2) 10
<b>Completion of medico-legal reports of clinical cases [MLEF and MLR]</b>		10

### 3<sup>rd</sup> MBBS Part 2 Examination

Method of assessment	No. of questions	Marks allocated to 3 <sup>rd</sup> MBBS	Total marks allocated to 3 <sup>rd</sup> MBBS
<b>MCQ &amp; BRQ</b>	(32+8) 40	30	
<b>SEQs</b>	4	30	
<b>OSPE</b>		10	
<b>Viva</b>		10	
<b>Contribution to 3<sup>rd</sup> MBBS</b>			80
<b>Continuous assessment and medico-legal report/ clinical contribution</b>			20
<b>Total marks</b>			<b>100</b>

### 3<sup>rd</sup> MBBS Part 2 Supplementary Examination

Method of assessment	No. of questions	Marks allocated to 3 <sup>rd</sup> MBBS	Total marks allocated to 3 <sup>rd</sup> MBBS
<b>MCQ &amp; SBR</b>	(32+8) 40	30	
<b>SEQs</b>	4	40	
<b>OSPE</b>	10	20	
<b>Viva</b>		10	
<b>Total</b>			<b>100</b>

- Simpson's Forensic Medicine  
Payne- James J, Jones R, Karch  
S, Manlove J 13th edition, 2011  
Hodder Arnold Publishers, London.
- Essentials of Forensic Medicine and  
Toxicology Reddy KS Narayan 2015,  
Sugunadevi Publishers, India
- Clinical Forensic Medicine MacLay WD (ed)  
2nd edition, 1996,  
Cambridge University Press, Cambridge.

### **Supplementary Reading**

- Knights Forensic Pathology Pekka S,  
Knight B 3<sup>rd</sup> Edition,  
2013 Arnold, London
- Lecture Notes in Forensic Medicine (Volume I - iv) De  
Alwis LBL
- Management of  
Poisoning, Fernando R.  
1998  
National Poisons Information Centre, Colombo.
- Revision Guide in Forensic  
Medicine, PR Ruwanpura  
2015, KDU



## **PUBLIC HEALTH & FAMILY MEDICINE**

**Duration of the course:** 4 semesters

The subjects of Public Health and Family Medicine are taught to the students in their third and fourth years. Public Health teaches the student the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of individuals, communities, society and public and private organizations. Family Medicine teaches students how to apply the concepts and principles of Family Medicine in the management of patients at the level of primary care.

The subject of Public Health, also known as community medicine consists of epidemiology, biostatistics, primary health care, health education and behavior change communication, research methodology, healthcare delivery systems, demography, communicable and non-communicable disease epidemiology, maternal and child health, environmental and occupational health and sanitation, food hygiene, health promotion, behavioural sciences, medical sociology, medical anthropology, healthcare management, human nutrition, disaster management and health economics. The students do a clinical appointment or clerkship, a community attachment, a family attachment and a research project.

The emphasis on the community attachment is health promotion, community diagnosis and community mobilization. The emphasis on the family attachment is behaviour change initiatives mainly with regard to currently prevalent non-communicable diseases. The students are attached to the Medical Officer of Health (MOH) areas of Dehiwala – Mount Lavinia and Ratmalana for the community attachment and the family attachment. The MOH areas are considered as the field training areas of the KDU.

The student research project enables the students to engage in systematic and ethical research under the guidance of the academic staff members of the Faculty. Students conduct their research in the field training area, in hospitals, at the KDU and at any other settings. During the „clinical“ attachment or the clerkship, the student learns about the health system and the supportive sectors, structures and services in Sri Lanka by visiting these places.

Family Medicine or primary care medicine is the discipline that integrates biomedical, behavioural and social sciences to provide curative and preventive care while addressing physical, psychological and social problems irrespective of age, sex or type of illness. Family

Medicine also includes coordination of care and continuity of care. These principles of family medicine/ primary care medicine that distinguishes it from other medical specialties are known to result in improved health outcomes. Classroom teaching as well as visits to private family practices in the community (Family Practice/ GP attachment) and other primary care settings in the state sector, will enable students to learn the organization of primary medical care services to the community and on how to deliver compassionate, person centred and family oriented care to individuals and families.

### **Intended learning Outcomes of the Public Health Programme**

At the end of the course the student should be able to

1. acquire knowledge, skills and attitudes to assess health status of communities and families and plan and implement appropriate promotive, preventive, curative, and rehabilitative measures within the social, religious, cultural and economic milieu in the community.
2. communicate effectively with the community and health care team for health promotion and disease prevention in order to improve health and prevent disease.
3. acquire knowledge, skills and attitudes to provide promotive, preventive, curative and rehabilitative care to fulfill the health needs of the individual, family and community with responsibility.
4. apply the principles and concepts of epidemiology and statistics and carry out research, describe health issues, assess health status of the community and determine the effects of health interventions in the community.
5. plan, conduct and report research using a scientific and systematic approach to develop skills of critical thinking, logical reasoning and appraisal of medical evidence.
6. demonstrate qualities of a healthcare professional who applies ethical principles in public health practice, in conducting research and in one's personal life.
7. develop commitment to teach health professionals, educate the family and community to promote health and prevent disease.
8. acquire knowledge of the health care delivery system in Sri Lanka, public health control programmes and the relevant legal framework.
9. develop appropriate attitudes towards personal and professional development through reflective practice and life-long learning.

### **Intended Learning Outcomes of the Family Medicine Programme**

At the end of the programme of study, the student should be able to

1. describe the doctor-patient relationship and acquire communication skills to elicit biomedical and psychosocial issues to understand the patient's illness experience.

2. use the patient-centred clinical method to take a focused history, carry out a relevant clinical examination, use selective investigations and institute a cost effective management plan after negotiating with the patient to ensure compliance.
3. acquire problem solving skills to sort out minor self-limiting illnesses from potentially serious diseases.
4. understand the psychological, social, behavioural and cultural factors that influence a patient's illness behavior and presentation for care.
5. have knowledge and understanding of family dynamics, the individual and family life cycle and factors that have an impact on the family in health and disease.
6. provide comprehensive curative and preventive care for common illnesses, non-communicable diseases, psychosocial problems and emergencies in the office, home or hospital.
7. coordinate a patient's health care through appropriate referral to specialists and other health resources in the community.
8. maintain medical records and provide continuity of care.
9. have knowledge and skills to care for the elderly and to provide end of life care and bereavement care.
10. have knowledge of ethical and legal issues in family practice.

## The Academic Programme

Subject area	Teaching learning method	Semester
<b>Epidemiology</b>	Lectures – 19 hours Tutorial SGD 8 hours	4,5
<b>Biostatistics</b>	Lectures – 14 hours Tutorials/ SGD – 3 hours	4,5
<b>Health care delivery system</b>	Lectures – 8 hours Tutorials/ SGD – 2 hours	4,5
<b>Demography</b>	Lectures – 6 hours Tutorials/ SGD – 2 hours	5
<b>Communicable and non-communicable disease epidemiology, Public Health Control Programmes of the Ministry of Health</b>	Lectures – 40 hours Tutorials/ SGD – 6 hours	5
<b>Maternal and child health</b>	Lectures – 12 hours Tutorials – 4 hours	6



<b>Environmental and occupational health, sanitation</b>	Lectures – 12 hours Tutorials – 3 hours	6
<b>Public health nutrition</b>	Lectures – 8 hours Tutorials/ SGD – 2 hours	7
<b>Clinical appointment</b>	80 hours (4 weeks)	6
<b>Family attachment</b>	45 hours	6,7
<b>Community attachment</b>	45 hours	6,7
<b>Research project</b>	45 hours	6,7
<b>Family medicine</b>	Lectures– 15 hours SGD – 10 hours	6,7
<b>Clinical appointment: Family Practice/ GP attachment</b>	40 hours (2 weeks)	6,7

## Assessments

Three continuous assessments will be held at the end of semesters 4, 5 and 6. At the end of the 7<sup>th</sup> semester, the 3<sup>rd</sup> MBBS Part II examination will be held.

## Continuous Assessments 1, 2 and 3

<b>Method of assessment</b>	<b>No. of questions</b>	<b>Marks allocated to 3<sup>rd</sup> MBBS</b>	<b>Total marks allocated to 3<sup>rd</sup> MBBS</b>
<b>MCQ and SBR</b>	(32+8) 40	15	
<b>SEQ</b>	5	25	
<b>Main viva</b>		10	
<b>Research project</b>			
Report	3		
Viva	7	10	
<b>OSCE/OSPE</b>			
Public Health	7		
Family Medicine	3	10	
<b>Community attachment</b>			
Report	2.5		
Viva	5	7.5	
<b>Family attachment</b>			
Report	2.5		
Viva	5	7.5	
<b>Contribution to 3<sup>rd</sup> MBBS</b>			85
<b>Continuous assessment contribution</b>			15
<b>Total marks</b>			100

### 3<sup>rd</sup> MBBS Part 2 Supplementary Examination

Method of assessment	No. of questions	Marks allocated to 3 <sup>rd</sup> MBBS	Total marks allocated to 3 <sup>rd</sup> MBBS
MCQ & SBR	(32+8) 40	30	
SEQ	5	40	
OSPE/OSCE		20	
Main Viva		10	
Total marks			100

#### Recommended textbooks:

##### Public Health

- Basic Epidemiology. Beaglehole R, Bonita R. & Kjellstroöm T 2<sup>nd</sup> edition, 2006, World Health Organization.
- Park's Textbook of Preventive and Social Medicine. Park K 21<sup>st</sup> edition, 2011, Banarsidas Bhanot Publishers, Jabalpu
- An Introduction to Medical Statistics. Bland M 3<sup>rd</sup> edition, 2000, Oxford University Press, Oxford
- Ageing population in Sri Lanka: Issues and future prospects. Siddhisena KAP. UNFPA and Population Association of Sri Lanka.
- Annual Health Bulletins, Ministry of Health, Colombo.
- Weekly Epidemiological Reports and Quarterly Epidemiological Bulletins, Epidemiology Unit, Colombo.
- Other booklets, circulars, leaflets etc of the units of Ministries of Health, Social Services, Environment, Labour etc, World Health Organization, Sri Lanka Medical Association, UNFPA, UNICEF etc and their websites

##### Family Medicine

- General Practice. Murtagh J, Third Edition, 2003, McGraw Hill Companies, Australia
- Lecture Notes in Family Medicine. Nandani de Silva, 2nd Edition, 2006, Sarvodaya Vishwa Lekha, Sri Lanka. Reprinted 2012.
- Essentials of Family Practice. Antoinette Perera, John Murtagh, 2007, Sarvodaya Vishwa Lekha.
- A textbook of Family Medicine. McWhinney IR. 1989, Oxford University Press.
- Essentials of Family Medicine. Sloane PD, Slatt LM, Ebell MH, Jacques LB. 4<sup>th</sup> Edition, 2002, Lippincott Williams and Wilkins, Baltimore, USA.



## **THE CLINICAL SCIENCES**

The student will study the clinical science subjects from 6<sup>th</sup> to 10<sup>th</sup> semesters. Clinical sciences include five main subjects including Clinical Medicine, Obstetrics and Gynaecology, Paediatrics, Psychiatry and Surgery. These subjects are the cornerstones of medicine for a practicing physician. The teaching-learning activities of these subjects include lectures, tutorials and clinical training.

The main assessment in the clinical sciences programme is the final MBBS examination, held at the end of the 10<sup>th</sup> semester assessing all 5 subjects. Meanwhile, end professorial assessments, mock exams, tutorials will be conducted at the end of each topic. To pass the Final MBBS examination, in each of the subjects, the student should score a minimum of 45% in theory papers and 50% in clinicals. A candidate obtaining 70% or more in a subject in the first attempt will be awarded a distinction pass in that subject.

## **MEDICINE**

**Duration of Course:** 7 Semesters

The subject of clinical medicine aims to impart knowledge on recognition of diseases and disorders of internal medicine. The student will be taught the subject and skills required in the identification of physical signs and symptoms, the indications for basic and specific investigations in order to formulate a differential diagnosis and the ability to make a general and pharmacological management plan for treatment. The student will also develop the ability to explain medical conditions, their treatment and prognosis as well as the skills in establishing a good rapport with patients, their relatives and other medical colleagues.



## Intended learning Outcomes

On completion of the series of lectures, tutorials, question based learning and clinical training the student will be able to

1. recognize diseases/ disorders of internal medicine.
2. identify physical signs and symptoms of the conditions.
3. apply knowledge to explain the underlying conditions.
4. determine indications for basic and relevant specific investigations.
5. interpret basic and specific investigation results relevant to different diseases/conditions.
6. outline non pharmacological and pharmacological management plans for the condition.
7. explain the outcome and prognosis of the condition.
8. develop good rapport, trust and ethical relationships with patients and families.
9. communicate relevant information and explanations effectively with the patients, families, colleagues and other professionals.
10. adopt the medical ethics applied to professional practice in all areas of internal medicine.



## The Academic Programme

Subject Area	Teaching/Learning Method	Semester
<b>Cardiovascular System</b>	Lectures – 15 hours Tutorials/ SGD/ PBL – 4 hours	6,7
<b>Respiratory System</b>	Lectures – 10 hours Tutorials/ SGD/ PBL – 3 hours	6,7
<b>Central Nervous System</b>	Lectures – 11 hours Tutorials/ SGD – 3 hours	7,8
<b>Nephrology</b>	Lectures – 8 hours Tutorials/ SGD/ PBL – 2 hours	8
<b>Gastroenterology/ Liver Pancreas</b>	Lectures – 10 hours Tutorials/ SGD/ PBL – 3 hours	8
<b>Endocrine and Metabolic Disorders</b>	Lectures – 14 hours Tutorials/ SGD/ PBL – 4 hours	8
<b>Haematology</b>	Lectures – 10 hours Tutorials/ SGD/ PBL – 2 hours	8
<b>Infections</b>	Lectures – 9 hours Tutorials/ SGD/ PBL – 2 hours	9
<b>Rheumatology</b>	Lectures – 5 hours Tutorials/ SGD/ PBL – 2 hours	9
<b>Dermatology</b>	Lectures – 6 hours	9
<b>Geriatrics</b>	Lectures – 6 hours	9
<b>Medical Ethics</b>	Lectures – 4 hours	9
<b>Special Topics</b>	Lectures – 5 hours	9



<b>Nuclear Medicine</b>	Lectures – 3 hours	9
<b>Naval Medicine</b>	Lectures – 3 hours	9
<b>Aviation Medicine</b>	Lectures – 3 hours	9

N.B. 4 tutorials will be held on the final 6 topics.

There will be 10 tutorials and 30 PBLs on various topics in the 10<sup>th</sup> Semester.



## Clinical appointments

Specialty	Duration
General Medicine (1 <sup>st</sup> )	8 weeks
General Medicine (2 <sup>nd</sup> )	8 weeks
Cardiology	2 weeks
Rheumatology	2 weeks
Neurology	2 weeks
Nephrology	2 weeks
Sexually Transmitted Diseases	2 weeks
Dermatology	2 weeks
Pulmonology	2 weeks
Blood Bank	2 weeks
Oncology	2 weeks
Radiology	2 weeks
Professorial Appointment	8 weeks

During the clinical appointments in semesters 9 and 10, 15 ward classes will be held per semester.

## Assessments

One continuous assessment will be held at the end of the professorial appointment. At the end of the 10<sup>th</sup> semester the final MBBS examination will be held.

## Continuous Assessment

Method of assessment	Marks allocated to Final MBBS	Total marks allocated to Final MBBS
OSCE	10	
Viva	10	
Total		20



### Final MBBS Examination

Method of Assessment No. of questions	Marks allocated to Final MBBS	Total marks allocated to Final MBBS
Paper 1 – MCQs	20	
Paper 2 – SEQs	20	
Long case – 1 case	20	
Short cases – 4 cases	20	
Contribution to Final MBBS examination		80
Continuous Assessment contribution		20
Total		100





## Final MBBS Supplementary Examination

Method of Assessment No. of questions	Marks allocated to Final MBBS	Total marks allocated to Final MBBS
Paper 1 – MCQs	20	
Paper 2 – SEQs	30	
Long case	25	
Short Case – 4 cases	25	
Total		100

### Recommended Textbooks:

- Kumar and Clark" s Clinical Medicine, Kumar P, Clark M  
Saunders Elsevier, Philadelphia.
- Davidson" s Principles and Practice of Medicine, Colledge NR, Walker BR, Ralston SH (eds)  
Churchill Livingstone, London.
- Oxford Hand Book of Clinical Medicine  
Longmore M, Wilkinson I (eds)  
Oxford University Press, Oxford.
- Hutchinson" s Clinical Methods, Glynn M, Drake W  
(eds) Saunders Ltd,  
Philadelphia.
- Macleod" s Clinical Examination Douglas G, Nicol F, Robertson C Churchill  
Livingstone, London.



## **SURGERY**

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**Duration of Course:** 7 Semesters

During this course, the student will impart the necessary knowledge and skills to evaluate simple surgical problems and manage them. In order to do so, the student is taught history taking in an orderly manner, eliciting the physical signs and interpreting them. Further knowledge will develop the ability to formulate a differential diagnosis and outline a simple management plan. The students will also be taught the method of identifying major surgical problems; critical illnesses and emergencies in the field of surgery that require senior review and intervention. During the clinical appointments, the student is expected to acquire knowledge, perform pre-operative preparation and to manage the post-operative period of a variety of surgical problems. Students are expected to learn the common procedures performed in a surgical ward and be able to perform them during their internship and thereafter. In addition, they are expected to acquire experience in the doctor-patient relationship, dealing with relatives of patients, working with other categories of staff in the hospital environment, ethics and documentation. The aim of the course is to enable the student to work in a surgical ward as a house officer after passing the final MBBS examination and as a competent medical officer thereafter. This is the foundation of surgery upon which students who choose to proceed with postgraduate training in surgery will build on.

### **Intended Learning Outcomes**

On completion of the series of lectures, tutorials, laboratory skills and clinical training the student is expected to be able to

1. obtain a history and elicit physical signs in a surgical patient and outline a simple management plan.
2. formulate a differential diagnosis and arrive at a working diagnosis.
3. choose the relevant investigations to be done to confirm the diagnosis and their interpretation.
4. choose the special investigations required and request them in consultation with seniors.
5. formulate and carry out an initial treatment plan.
6. perform the initial management of surgical emergencies including trauma with the help of seniors.
7. communicate with relatives and patients whilst maintaining professionalism and ethics.
8. develop healthy relationships with colleagues and hospital staff.



The Academic Programme

<b>Subject Area</b>	<b>Teaching /Learning Method</b>	<b>Semester</b>
<b>Preoperative care</b>	Lectures – 8 hours Tutorials/SGDs/Skills/PBL -4 hours	6
<b>Basic Surgical techniques</b>	Lectures – 3 hours Tutorials/SGDs/Skills /PBL-2 hours	6
<b>Medico-legal aspects</b>	Lectures – 1 hours Tutorials/SGDs/Skills -4 hours	6
<b>Vascular surgery</b>	Lectures –5 hours Tutorials/SGDs/Skills -2 hours	6
<b>Thorax</b>	Lectures –1 hour Tutorials/SGDs/Skills -2 hours	6
<b>Head and neck</b>	Lectures –3 hours Tutorials/SGDs/Skills -1 hours	6
<b>GIT</b>	Lectures –9 hours Tutorials/SGDs/Skills -8 hours	7
<b>Hepatobiliary system and pancreas</b>	Lectures – 4 hours Tutorials/SGDs/Skills -2 hours	7
<b>Abdominal wall/Abdomen</b>	Lectures –3 hours Tutorials/SGDs/Skills -1 hour	7
<b>Musculoskeletal disorders</b>	Lectures –6 hours Tutorials/SGDs/Skills -1 hour	7
<b>Endocrine surgery</b>	Lectures – 4 hours Tutorials/SGDs/Skills -2 hours	7
<b>Management of trauma/Critical care</b>	Lectures –11 hours Tutorials/SGDs/Skills -10 hours	8
<b>Chemical, radiological biological and nuclear warfare</b>	Lectures –5 hours Tutorials/SGDs/Skills -2 hours	8
<b>Principles of oncology</b>	Lectures –6 hours Tutorials/SGDs/Skills -6 hours	8
<b>Urology</b>	Lectures –8 hours Tutorials/SGDs/Skills -8 hours	9
<b>Paediatric Surgery</b>	Lectures –7 hours	9
<b>Eye</b>	Lectures –2 hours	9
<b>ENT (Otorhinolaryngology)</b>	Lectures –3 hours	9
<b>Radiology and current concepts</b>	Lectures –3 hours	9

<b>Skills / Laboratory session</b>	Hours 12	1 & 10
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### Clinical appointments

	Speciality	Duration
1	General Surgery (1 <sup>st</sup> )	8 weeks
2	General Surgery (2 <sup>nd</sup> )	8 weeks
3	Orthopaedic Surgery	4 weeks
4	Otorhinolaryngology(ENT)	2 weeks
5	Urology	2 weeks
6	Ophthalmology	2 weeks
7	Trauma	2 weeks
8	Vascular	2 weeks
9	Anaesthesiology and Critical Care	1 week
10	Oncosurgery	2 weeks
11	Vascular surgery	1 week
	<b>Total number of weeks</b>	<b>34 weeks</b>

<b>Professorial clinical appointment</b>	
<b>Surgery</b>	8 weeks

During the clinical appointments in semester 9 and 10, ward classes will be held.

### Assessments

One continuous assessment will be held at the end of the professorial appointment. At the end of the 10<sup>th</sup> semester the final MBBS examination will be held.

### Continuous Assessments

Method of Assessment	Marks allocated for final MBBS	Total Marks allocated for final MBBS
<b>OSCE</b>	10	
<b>Viva</b>	10	
<b>Total</b>		20



### Final MBBS Examination

Method of Assessment No. of questions	Marks allocated to final MBBS	Total marks allocated to final MBBS
Paper 1 – MCQs	20	
Paper 2 – SEQs	20	
Long case – 1case	20	
Short cases	20	
<b>Total</b>		80
Continuous assessments		20
<b>Total</b>		100

### Final MBBS supplementary Examination

Method of Assessment No. of questions	Marks allocated to final MBBS	Total Marks allocated to final MBBS
Paper 1 – MCQs	20	
Paper 2 – SEQs	30	
Long case – 1case	25	
Short cases	25	
<b>Total marks</b>		100

### Recommended textbooks:

- Bailey & Love's Short Practice of Surgery  
Williams N, Bulstrode C, O'Connell PR (eds)  
26<sup>th</sup> edition, 2013  
Arnold Publications, London. (Hodder Headline Group)
- Lecture Notes: General Surgery  
Ellis H, Calne R, Watson C  
12<sup>th</sup> edition, 2011  
Wiley-Blackwell, Oxford.
- Browse's Introduction to the Symptoms and Signs of Surgical Disease  
Black J, Browse NL, Burnand KG, Thomas WEG  
4<sup>th</sup> edition, 2005  
Hodder Arnold Publications, London.



## Supplementary Reading

- Clinical Surgery Made Easy<sup>1<sup>st</sup></sup>  
Edition 2008  
TFM Publishing Ltd.
- Hamilton Bailey" s Physical Signs. Demonstrations of  
Physical Signs in Clinical Surgery  
Lumley JSP (ed)  
18<sup>th</sup> edition,1997  
Butterworth Heinemann, Oxford.



## PAEDIATRICS

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**Duration of Course:** 7 Semesters

Paediatrics is the branch of medicine that deals with the care of infants, children, and adolescents. The age limit ranges from birth up to 18 years of age. However, due to practical considerations the upper limit may extend up to 21 years, especially for chronic diseases such as diabetes where the child transfers from paediatrics to adult medicine through a transitional period of shared care.

A medical practitioner who specializes in paediatrics is known as a paediatrician. The word *paediatrics* means "healer of children". It is derived from the two Greek words "*pais*" meaning child and "*iatros*" meaning healer.

A child is a part of a family and a larger community. Hence, a paediatrician needs to work with members of families and communities in caring for children. Therefore, Paediatricians work both in hospitals as well as in the primary health care settings in communities.

Paediatrics encompasses all issues relating to child health. Hence, growth, nutrition, development and immunization all fall within the gambit of paediatrics, apart from the usual childhood diseases. The assessment of nutritional status and monitoring of growth and development are integral to paediatrics. The detection and management of abnormal growth and delayed development is an essential component of paediatric practice. Childhood immunization is another area, which is closely linked to child health and overall well-being.

Children are not miniature adults and paediatrics differs vastly from adult medicine. These differences are seen right across the pediatric practice. For example, although history taking is a very important skill in paediatrics as well as in all other branches of medicine, the pediatric patient may not be able to give a comprehensive history. Hence, the role of parent or guardian becomes vital. Also the format and technique of physical examination as well as the differential diagnoses reached, differ considerably between the different age groups within paediatrics. In the management of illnesses, the pediatric patient should be seen as a part of a family and community rather than an isolated entity. The circumstances of the family and the community should be considered if a successful outcome is to be expected.

This course aims to impart the knowledge and skills required for the medical student to work in a paediatric ward as an intern house officer and later on as a primary health care provider for children and families.





## **Intended Learning Outcomes**

### **General Objectives**

On completion of the series of lectures, tutorials, laboratory skills and clinical training the student is expected to be able to

1. diagnose and treat common childhood diseases.
2. identify and refer conditions needing specialized management.
3. manage a paediatric emergency in a primary care setting.
4. advice individuals, families and community on maintaining a child in good health.
5. function as a house officer in a paediatric unit in a Base/General/Teaching hospital in Sri Lanka.
6. understand the scientific basis of paediatrics in order to proceed to further specialization in the subject if he/she so desires.

### **Specific objectives of clinical training**

On completion of the series of lectures, tutorials, laboratory skills and clinical training the student is expected to be able to

1. take a complete and relevant paediatric history.
2. do a complete and relevant physical examination of a neonate, infant, preschool and a school child.
3. assess growth using appropriate growth charts.
4. do a basic developmental screening.
5. at the end of history and physical examination the student should be able to
  - a. give a probable diagnosis and differential diagnosis.
  - b. give reasons for arriving at the diagnosis.
  - c. compile a list of problems that the child has.
  - d. suggest investigations needed to confirm the diagnosis.
  - e. interpret the investigation results.
  - f. draw up a plan of management.
  - g. write a prescription appropriate for the child.
  - h. explain to the parents in simple language, the problem that the child has and what needs to be done.
  - i. summarize the patient's problems adequately to a group.
  - j. write clear concise and relevant progress notes for the patient.
  - k. write a diagnosis card (discharge summary) for the patient.



## The Academic Programme

Subject Area	Teaching/Learning Method	Semester
<b>Introduction to Paediatrics</b>	Lecture - 2 hours	6
<b>Care of the child 1 to 5 years</b>	Lecture - 6 hours	6
<b>The new born</b>	Lectures - 20 hours Tutorials - 4 hours Slide show- 2 hours	7
<b>Growth and development</b>	Lectures- 12 hours Tutorials- 2 hours Slide show- 2 hours	7
<b>Nutrition</b>	Lectures-16 hours Tutorials – 4 hours	7
<b>Immunization</b>	Lectures 2 hours	7
<b>Childhood infections</b>	Lectures- 10 hours Tutorials- 2 hours	7
<b>Cardiovascular diseases</b>	Lectures -10 hours Tutorials - 2 hours	8
<b>Respiratory diseases</b>	Lectures - 10 hours Tutorials - 4 hours	8
<b>Gastrointestinal disease</b>	Lectures- 6 hours Tutorials- 2 hours	8
<b>Genitourinary diseases</b>	Lectures -10 hours Tutorials- 2 hours	8
<b>Central Nervous system diseases</b>	Lectures- 8 hours Tutorials- 2 hours	8
<b>Paediatric Haematology</b>	Lectures- 8 hours Tutorials- 2 hours	8
<b>Paediatric Endocrine disorders</b>	Lectures - 10 hours Tutorials- 2 hours	8
<b>Paediatric oncology and immunology</b>	Lectures- 8 hours Tutorials- 2 hours	9
<b>Orthopaedic problems in children</b>	Lectures- 4 hours Slide show- 2 hours	9
<b>Child psychiatry</b>	Lectures- 4 hours Tutorials- 2 hours	9
<b>Miscellaneous topics</b>	Lectures- 10 hours	9



## **Description of the course**

Paediatrics will be taught from semester 4. Teaching activities will include 4 clinical appointments and theoretical teaching.

## **Theoretical Teaching**

Theoretical teaching will be in the form of lectures, tutorials and small group discussions.

NB: Tutorials will be held on selected topics during semesters 9 & 10.

## **Integrated Ward Class**

Integrated Ward Classes will be done during the professorial appointment.

## **Clinical Appointments**

Paediatrics will be taught during 4 clinical appointments.

1. Foundation course - semester 3 / 4 - (1 week) conduct by academic staff of the Department Paediatrics at UHKDU.
2. Paediatrics 1<sup>st</sup> appointment – semester 5-4 weeks
3. Paediatrics 2<sup>nd</sup> appointment – semester 6-4 weeks
4. Professorial Paediatrics appointment – semester 8, 9 & 10- (8 weeks) conducted by the academic staff of Department of Paediatrics UHKDU.

## **Clinical appointments**

<b>Speciality</b>	<b>Duration</b>
<b>General Paediatrics (1<sup>st</sup>)</b>	4 weeks
<b>General Paediatrics (2<sup>nd</sup>)</b>	4 weeks
<b>Professorial Appointment</b>	8 weeks

## Assessments

One continuous assessment will be held at the end of the professorial appointment. At the end of the 10<sup>th</sup> semester the final MBBS examination will be held.

### End Professorial Assessments

Method of Assessment No of questions	Marks allocated to each component	Total marks allocated to Final MBBS
OSCE	10	
Viva	10	
Total		20



## Final MBBS Examination

Method of assessment	Marks allocated to each component	Total marks allocated to Final MBBS
Paper 1 – MCQ/BRQ (SBR)	20	
Paper 2 – SEQ	20	
Long case – 1 case	20	
Short case – 02 cases	20	
Contribution from summative examination		80
Continuous assessment contribution		20
Total marks		100

## Final MBBS Supplementary Examination

Method of Assessment No. of questions	Marks allocated to each component	Total marks allocated to Final MBBS
Paper 1 – MCQ	20	
Paper 2 – SEQ	30	
Long case- 1 case	25	
Short case – 02 cases	25	
Total		100



## **Recommended textbooks:**

- The Illustrated Textbook of Paediatrics Lissauer T, Clayden G 4<sup>th</sup> edition, 2011  
Mosby Elsevier, Missouri
- Essential Paediatrics  
Hull D, Johnston DI  
Latest edition,  
Churchill Livingstone, London.
- Hospital Paediatrics,  
Milner AD, Hull D Latest  
edition,  
Churchill Livingstone, London.
- Ghai Essential Paediatrics  
Vinod K Paul, Araum D  
Bagga 8<sup>th</sup> edition
- Text Book of Paediatrics  
Fofar and Arneil  
Latest edition

## **Supplementary reading**

- Nelson's Textbook of Paediatrics Latest edition



## **OBSTETRICS AND GYNAECOLOGY**

**Duration of Course:** 7 semesters

The subject of obstetrics and gynaecology is a surgical and medical specialty that focuses mainly on the female reproductive system and the care of women. However, when appropriate other systems such as the cardiovascular and endocrine systems are studied and discussed.

Obstetrics focuses on physiological and abnormal events related to pre-pregnancy, pregnancy, childbirth and the puerperium. Gynecology is geared towards general healthcare of females from adolescent to menopause, with a special focus on physiological and pathological conditions in the female reproductive organs.

### **Intended Learning Outcomes**

On completion of the course the students should acquire the required knowledge, skills and attitudes to function under supervision and mentorship as an intern house officer and later as a medical officer in obstetrics and gynaecology at main hospitals, primary health care institutions and private sector to provide the best care with a humane approach.

As a medical officer he/she should also acquire the skill to seek advice and to refer to appropriate institutions or specialists at the earliest when it is not possible to provide what is best for the patient and the family.

It is desirable for the students to acquire the correct mind set to continue in further education to keep abreast with the constantly evolving advances in obstetrics & gynaecology.

To achieve above the following key learning objectives are formulated and implemented during the course.

1. Counsel and manage all aspects of normal pregnancy, labour, delivery and puerperium without any further resident training.
2. Counsel and manage common gynaecological problems without further resident training.
3. Provide the initial management of common obstetric & gynaecological emergencies without further resident training.
4. Recognize common abnormalities of pregnancy, labour, delivery and puerperium and to understand the principles of management of such abnormalities.
5. Describe principles of early diagnosis of gynaecological malignancies and other important gynaecological problems.



6. Perform duties of an intern house officer in obstetrics & gynaecology under supervision following graduation.
7. Provide basic care at primary and secondary level to pregnant women during antenatal, labour and puerperium.
8. Diagnose and manage gynaecological problems as a medical officer in the state sector or as a family practitioner.
9. Counsel and promote prevention and methods available for screening of obstetric and gynaecological problems.
10. Show continued desire to broaden knowledge by further self-study and research.
11. Value the importance of Continued Professional Development.
12. Acquire and demonstrative communication skills and attributes of professionalism.
13. Function as an effective member in a health team.
14. Establish a foundation to further specialize in obstetrics & gynaecology if desired to do so.





# OBSTETRICS & GYNAECOLOGY LECTURE SCHEDULE AND TUTORIALS FOR SEMESTERS

## LECTURE SCHEDULE

	Specialty	Semester	Topic
1	Obstetrics	6 <sup>th</sup>	Introduction – Expectations, Objectives, Training programme and examinations
2	Gynaecology	6 <sup>th</sup>	Gynaecology patient: History, Examination, Diagnosis and presentation
3	Obstetrics	6 <sup>th</sup>	Obstetric patient: History, Examination, Diagnosis and presentation
4	Gynaecology	6 <sup>th</sup>	Reproductive organs, development and implications
5	Obstetrics	6 <sup>th</sup>	Normal pregnancy and physiological changes
6	Gynaecology	6 <sup>th</sup>	Normal and abnormal menstrual cycles
7	Obstetrics	6 <sup>th</sup>	Pelvis, fetal positions and mechanism of labour
8	Obstetrics	6 <sup>th</sup>	Research, audit, FHB and WHO
9	Obstetrics	6 <sup>th</sup>	Antenatal care
10	Obstetrics	6 <sup>th</sup>	Normal and abnormal labour – Diagnosis and Management
11	Obstetrics	6 <sup>th</sup>	Minor disorders in pregnancy
12	Gynaecology	6 <sup>th</sup>	Vaginal discharge, pruritus vulvae, STD
13	Obstetrics	6 <sup>th</sup>	Genetics in Obstetrics and Gynaecology
14	Obstetrics	6 <sup>th</sup>	Management of puerperium

15	Obstetrics	6 <sup>th</sup>	Nutrition in pregnancy
16	Obstetrics	7 <sup>th</sup>	Anaemia in pregnancy
17	Gynaecology	7 <sup>th</sup>	Pelvic inflammatory disease
18	Obstetrics	7 <sup>th</sup>	Antepartum haemorrhage
19	Obstetrics	7 <sup>th</sup>	Management of third stage of labour and complications
21	Gynaecology	7 <sup>th</sup>	Miscarriage
22	Obstetrics	7 <sup>th</sup>	Heart disease complicating pregnancy
23	Obstetrics	7 <sup>th</sup>	Gestational diabetes and glucose intolerance
24	Obstetrics	7 <sup>th</sup>	Other medical disorders in pregnancy
25	Gynaecology	7 <sup>th</sup>	Ectopic pregnancy
26	Obstetrics	7 <sup>th</sup>	Induction of labour
27	Obstetrics	7 <sup>th</sup>	Gestational trophoblastic disease
28	Obstetrics	7 <sup>th</sup>	Assessment of fetal wellbeing
29	Gynaecology	7 <sup>th</sup>	Menstrual disorders
30	Obstetrics	7 <sup>th</sup>	Caesarean section
31	Obs & Gyn	8 <sup>th</sup>	Analgesia and Anaesthesia
32	Obstetrics	8 <sup>th</sup>	Hypertensive disorders in pregnancy
33	Obstetrics	8 <sup>th</sup>	Eclampsia
34	Obstetrics	8 <sup>th</sup>	Preterm labour/rupture of membranes and past dates
35	Obstetrics	8 <sup>th</sup>	Intra uterine fetal death and stillbirth
36	Obstetrics	8 <sup>th</sup>	Multiple pregnancy
37	Gynaecology	8 <sup>th</sup>	Dysmenorrhoea/Premenstrual syndrome
38	Obstetrics	8 <sup>th</sup>	Instrumental delivery
39	Obs and Gyn	8 <sup>th</sup>	Trauma to genital tract

40	Gynaecology	8 <sup>th</sup>	Subfertility – Investigation
41	Gynaecology	8 <sup>th</sup>	Subfertility – Treatment
42	Obstetrics	8 <sup>th</sup>	Blood group incompatibility in pregnancy
43	Obstetrics	8 <sup>th</sup>	Drugs in pregnancy and lactation
44	Gynaecology	8 <sup>th</sup>	Endometriosis
45	Gynaecology	8 <sup>th</sup>	Displacement of genital organs
46	Gynaecology	9 <sup>th</sup>	Urinary Incontinence
48	Gynaecology	9 <sup>th</sup>	Benign tumours of the genital tract
50	Obstetrics	9 <sup>th</sup>	Malpresentations and Malpositions
51	Obstetrics	9 <sup>th</sup>	Abnormalities in amniotic fluid
52	Gynaecology	9 <sup>th</sup>	Screening, prevention and early detection of malignancies
54	Gynaecology	9 <sup>th</sup>	Malignancies in the genital tract
55	Obstetrics	9 <sup>th</sup>	Intra-uterine growth restriction
56	Gynaecology	9 <sup>th</sup>	Menopause
57	Obstetrics	9 <sup>th</sup>	Influence of age and parity on pregnancy
58	Gynaecology	9 <sup>th</sup>	Radiotherapy and chemotherapy in gynaecology
59	Gynaecology	9 <sup>th</sup>	Revision
60	Obstetrics	9 <sup>th</sup>	Revision

## TUTORIALS IN OBSTETRICS & GYNAECOLOGY

	Specialty	Semester	Topic
1	Obstetrics	6 <sup>th</sup>	Antenatal care
2	Gynaecology	6 <sup>th</sup>	Investigations in gynaecology
3	Obs&Gyn	7 <sup>th</sup>	Genetics in Obstetrics and gynaecology
4	Obs&Gyn	7 <sup>th</sup>	Diagnostic methods in Obstetrics and Gynaecology
5	Obs&Gyn	7 <sup>th</sup>	Documentation and charts available
6	Obs&Gyn	8 <sup>th</sup>	Answer/discussion of questions
7	Obs&Gyn	8 <sup>th</sup>	Answer/discussion of questions
8	Obs&Gyn	9 <sup>th</sup>	Answer/discussion of questions
9	Obs&Gyn	9 <sup>th</sup>	Answer/discussion of questions

## SEMINARS IN OBSTETRICS & GYNAECOLOGY

	Specialty	Semester	Topic
1	Obstetrics	8 <sup>th</sup>	Management of labour
2	Gynaecology	8 <sup>th</sup>	Menstrual problems
3	Obstetrics	8 <sup>th</sup>	Pregnancy counseling
4	Gynaecology	9 <sup>th</sup>	Contraception
5	Obs and Gyn	9 <sup>th</sup>	Common drugs in obstetrics and gynaecology
6	Obs and Gyn	9 <sup>th</sup>	Impact of age in obstetrics and gynaecology



## SKILLS LABORATORY BASED SKILLS DEVELOPMENTS

1	Obstetrics	6 <sup>th</sup>	Management of Labour and delivery
2	Gynaecology	6 <sup>th</sup>	Pelvic examination
3	Gynaecology	6 <sup>th</sup>	Episiotomy repair
4	Obstetrics	7 <sup>th</sup>	Instrumental deliveries
5	Obstetrics	7 <sup>th</sup>	Breech delivery

NB. In addition to the above, there will be 10 problem based learning classes on selected topics.

The syllabus of the training programme consists of 21 modules. Under each module the content areas, objectives, outcomes and teaching methods are described in detail. These will be made available to the students on commencement of this course.

### **Methods of training**

The training will include lectures, tutorials, seminars, problem based learning, reflective learning, self-study and clinical training. The summaries of key teaching activities are indicated in the tables below.

### **Summary of clinical teaching activities**

During the clinical appointments there shall be face to face teaching facilitated by the teachers and self-learning activities in the wards, clinics, diagnostic units, labour ward and operating theatres. During the clinical appointments the portfolio/logbook should be maintained.

APPOINTMENT	DURATION	SEMESTER
<b>Obstetrics &amp; Gynaecology (1<sup>st</sup>)</b>	4 weeks	7
<b>Obstetrics &amp; Gynaecology (2<sup>nd</sup>)</b>	4 weeks	8
<b>Professorial O &amp; G</b>	8 weeks	9 and 10
<b>TOTAL</b>	<b>16 weeks</b>	



## Assessments

There shall be two forms of assessments; Continuous (formative) and final MBBS (summative)

The continuous assessment will be held at the end of the professorial appointment. At the end of the 10<sup>th</sup> semester the final MBBS examination will be held.

### Continuous Assessment (formative)

Method of assessment	Marks allocated to Final MBBS	Total marks allocated to Final MBBS
OSCE	10	
Viva	8	
Portfolio book	2	
<b>Total</b>		<b>20</b>

### Final MBBS Examination (summative)

Method of assessment	Marks allocated to Final MBBS	Total marks allocated to Final MBBS
<b>Paper 1 - MCQ</b> (20 true/false and 30 SBA questions)	20	
<b>Paper 2 – SEQ</b> (6 questions)	20	
<b>Long case – 2 cases</b> (one case each for Obstetrics and Gynaecology)	40	
<b>Contribution to final MBBS examination</b>		<b>80</b>
<b>Continuous assessment contribution</b>		<b>20</b>
<b>Total marks</b>		<b>100</b>

## Final MBBS Supplementary Examination

Method of Assessment No of questions	Marks allocated to 2 <sup>nd</sup> MBBS	Total marks allocated to 2 <sup>nd</sup> MBBS
Paper 1 - MCQ (20 true/false and 30 SBA questions)	20	
Paper 2 – SEQ (5 questions)	30	
Long case – 2 cases (one case each for Obstetrics and Gynaecology)	50	
Total marks		100



## **Recommended textbooks**

- Essential Antenatal Care  
Author : Prof. Deepal S Weerasekara  
Edition: 03rd  
Year of publication: 2022

- Essential Labor and puerperium Care  
Author: Prof. Deepal S Weerasekara  
Edition : 02<sup>nd</sup>  
Year of Publication – 2020

Essential Gynaecological care  
Author: Prof. Deepal S Weerasekara  
Edition : 03<sup>rd</sup>  
Year of Publication – 2021

- Gynaecology by Ten  
TeachersAuthors: Ash Monga,  
Stephen Dobbs Edition: 20<sup>th</sup>  
Year of publication: 2019

### Supplementary Reading

- Oxford Handbook of Obstetrics and Gynaecology  
Authors: Sally Collins, Sabaratnam Arulkumaran,  
Kevin Hayes Edition: 2<sup>nd</sup>  
Year of publication: 2011





# **PSYCHIATRY**

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**Duration of the course:** 4 semesters

Psychiatry is a branch of medical science concerned with mental and behavioural disorders. It is one of the five major clinical disciplines examined in the final MBBS examination.

During this course, a student will be imparted the necessary knowledge, skills and attitudes to recognize and evaluate common psychiatric and behavioural problems and manage them.

Students will also learn to identify problems which require referral to specialized treatment. The aim of the course is to enable a student to be able to identify and do the basic management till referred to specialized care for behavioural problems seen in general hospital settings as a competent house officer and a general medical officer thereafter. This will be the foundation of Psychiatry upon which students who choose to proceed with postgraduate training in psychiatry will build on.

## **Intended Learning Outcomes**

### **General Objectives**

On completion of this course the student will be able to

1. organize clinical data from psychiatric interview and mental status examination to hypothesize reasonable psychiatric diagnoses and psychosocial circumstances or stressors.
2. demonstrate knowledge about common psychiatric presentations.
3. recognize potential risks and psychiatric emergencies among general medical patients.
4. demonstrate knowledge about commonly available psychiatric medication.
5. identify and refer conditions needing specialist management.
6. understand the parameters of ethical clinical practice.
7. demonstrate knowledge about medical and medico-legal interventions (psychiatric referrals, involuntary commitment, judgments of medical incompetence).
8. demonstrate ability in psycho-education.
9. be familiar with psychiatric services available in Sri Lanka.
10. understand the scientific basis of psychiatry in order to proceed to further specialization if the student desires.



## **Specific Objectives of Clinical Training**

At the end of the clinical training the student should be able to

2. demonstrate the ability to conduct a psychiatric interview and perform a mental state examination.
3. give a probable diagnosis and differential diagnosis giving reasons for justification.
4. recognize the clinical characteristics of the following mental disorders: major depression, bipolar disorder, schizophrenia, schizoaffective disorder, panic disorder, generalized anxiety disorder, PTSD, obsessive-compulsive disorder, personality disorders, substance use disorders, cognitive disorders, organic psychiatric conditions, psychiatric conditions related to general medical disorders, disorders in puerperium, acute stress and adjustment disorders, somatoform disorders, attention-deficit/hyperactivity disorder (ADHD) and other common childhood conditions.
5. the student will demonstrate the ability to provide coherent, thoughtful presentations of psychiatric patients in both oral and written forms.
6. the student will recognize indications for treatments of patients with mental disorders.
7. be familiar with laboratory and other types of testing (e.g., psychological tests).
8. the student will demonstrate the ability to work in a multidisciplinary team.
9. the student will demonstrate the capacity to respond appropriately to constructive feedback given by instructors.



## The Academic Programme

<b>Subject Area</b>	<b>Teaching/Learning Method</b>	<b>Semester</b>
<b>Introduction to psychiatry</b>	Lectures – 2 hours	4
<b>History taking and assessment of mental state</b>	Lectures – 4 hours	4, 8
<b>Psychopathology</b>	Lectures – 4 hours	8-10
<b>Classification of psychiatric disorders</b>	Lectures – 2 hours	8-10
<b>Delirium</b>	Lectures – 2 hours	8-10
<b>Dementia</b>	Lectures – 2 hours	8-10
<b>Alcohol and psychoactive substance disorders</b>	Lectures – 4 hours	8-10
<b>Schizophrenia and other psychotic disorders</b>	Lectures – 4 hours	8-10
<b>Affective disorders</b>	Lectures – 4 hours	8-10
<b>Generalized anxiety disorder and Panic disorder</b>	Lectures – 2 hours	8-10
<b>Phobic disorder</b>	Lectures – 2 hours	8-10
<b>Obsessive compulsive disorder</b>	Lectures – 2 hours	8-10
<b>Stress related illnesses</b>	Lectures – 2 hours	8-10
<b>Defence Mechanisms</b>	Lectures – 2 hours	8-10
<b>Deliberate self-harm</b>	Lectures – 2 hours	8-10
<b>Dissociative disorders</b>	Lectures – 2 hours	8-10
<b>Somatization disorders</b>	Lectures – 2 hours	8-10
<b>Sleep, eating and sexual disorders</b>	Lectures – 4 hours	8-10
<b>Pregnancy and postpartum disorders</b>	Lectures – 2 hours	8-10
<b>Personality Disorders</b>	Lectures – 2 hours	8-10
<b>Child psychiatry</b>	Lectures – 10 hours	8-10
<b>Intellectual disability</b>	Lectures – 2 hours	8-10
<b>Forensic psychiatry</b>	Lectures – 2 hours	8-10
<b>Community psychiatry</b>	Lectures – 2 hours	8-10
<b>Medically unexplained physical symptoms</b>	Lectures – 2 hours	8-10
<b>Emergencies in psychiatry</b>	Lectures – 2 hours	8-10
<b>Military Psychiatry</b>	Lectures – 4 hours	8-10
<b>Psychopharmacology and other treatments in</b>	Lectures – 4 hours	8-10

<b>psychiatry</b>		
<b>Psychological treatments</b>	Lectures – 6 hours	8-10

NB: 30 Tutorials/PBL/Seminars will be held on selected topics during semesters 8-10.



### Clinical appointments

Specialty	Duration
Psychiatry (1 <sup>st</sup> ) One week at Military Hospital	4 weeks
Professorial Appointment	8 weeks

During the clinical appointments in semesters 9 and 10, 15 wardclasses will be held per Semester.

### Assessments

One continuous assessment will be held at the end of the professorial appointment. Continuous assessment in psychiatry will constitute a viva based on the case book. At the end of the 10<sup>th</sup> semester, the final MBBS examination will be held.

### Continuous Assessment

Method of Assessment	Marks allocated	Total marks allocated to Final MBBS
Case book based viva	10	10

### Final MBBS Examination

Method of assessment	Marks allocated to Final MBBS	Total marks allocated to Final MBBS
Paper 1 – MCQ/BRQ (50)	25	
Paper 2 – SEQ	25	
Long case- 01 case	25	
OSCE/Short Case- 04 cases	15	
Contribution from summative examination		90
Continuous assessment contribution		10
Total marks		100



## Final MBBS Supplementary Examination

Method of assessment	Marks allocated to Final MBBS	Total marks allocated to Final MBBS
Paper 1 – MCQ	25	
Paper 2 – SEQ	25	
Long case	30	
OSCE /Short Cases	20	
<b>Total Marks</b>		<b>100</b>

### Recommended Textbooks:

- Textbook of Psychiatry Puri BK, Treasaden IH 3<sup>rd</sup> edition, 2011  
Churchill Livingstone, London.
- Handbook of Clinical Psychiatry, a Practical Guide, de Silva V, Hanwella R 2012  
Kumaran Book House, Chennai.
- Psychiatry: An Oxford Core Text Gelder M, Mayou R, Geddes J 3<sup>rd</sup> edition, 2005 Oxford Medical Publications, Oxford.



# **RULES FOR STUDENTS**

## **GENERAL RULES**

Some general rules applicable to students of the FOM are given below. A more comprehensive list of rules issued by the Faculty of Defense Studies is given separately.

Any change of address must be immediately brought to the notice of the Dean.

Students are not permitted to leave their registered address during termtime without prior permission from the Dean.

A student is not permitted to be absent from work for more than 7 days without informing the Dean.

## **IN CASE OF ILLNESS**

### **a. Illness during termtime**

If the student is taken ill during term time he/she should inform the University Medical Officer as early as possible. If the student is unable to do so, he/she should inform the Dean in writing by registered post as early as possible AND submit within SEVEN days of falling ill, a valid medical certificate issued by one of the persons listed under (c) below.

### **b. Illness at examination time (including continuous assessment)**

If a student is taken ill just before or during any part of an examination, he/she should inform the UMO as early as possible. If the student is unable to do so for a valid reason, he/she should inform the Dean in writing by registered post as early as possible AND submit a valid medical certificate from one of the persons listed under (c) below, within SEVEN days of falling ill.

### **c. Persons entitled to issue valid medical certificates for the above purposes**

- (1) Medical officer of a Military Hospital or SLAF/SLN Hospital
- (2) A consultant of any government hospital
- (3) A District Medical Officer (DMO) in a government hospital

### **a. PLEASE NOTE that medical certificates from medical officers other than**

those listed will NOT be accepted.

- b. A medical certificate is not valid unless it has been submitted within ONE WEEK of the illness.

Students are expected at all times to dress neatly and behave with decorum. Gathering together and talking in loud tones whether in hospital, clinic or in the vicinity of the officers, library or lecture halls is banned. Smoking is prohibited in the premises of the University and the Teaching Hospitals.

No student or student body shall collect monies for any purpose without written permission from the Dean.

Only official functions approved by the Vice Chancellor may be organized and held within the FOM.



**APPLICATION FOR APPROVAL OF AN EARLY EXIT OR FALL BACK  
QUALIFICATION FOR AN EXISTING UNDERGRADUATE DEGREE  
PROGRAMME AT  
GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY**

<b>1</b>	<b>1.1</b>	Name of Fallback Qualification in all three languages, in accordance with SLQF 2015	(English)	Diploma in Human Biology
			(Sinhala)	මානව ජීව විද්‍යාව පිළිබඳ ඩිප්ලෝමාව
			(Tamil)	மனித உயிரியலில் டிப்ளமோ
	<b>1.2</b>	Abbreviated qualification (Fallback Qualification)	(English)	Dip (Human Biology)
<b>2</b>	Programme Offering Entity			
	<b>2.1</b>	University	General Sir John Kotelawala Defence University	
	<b>2.2</b>	Faculty/ Institute	Faculty of Medicine	
	<b>2.3</b>	Department(s) (if applicable)	Department of Pre-Clinical Sciences	
	<b>2.4</b>	Final Senate Approval for Fallback Qualification	Date: ...../..... /..... Evidence: Yes <input type="checkbox"/> No <input type="checkbox"/> (Date of Senate meeting and evidence) <b>(Evidence – Please attach as Annex X)</b>	
	<b>2.5</b>	Final Council Approval Fallback Qualification	Date: ...../..... /..... Evidence: Yes <input type="checkbox"/> No <input type="checkbox"/> (Date of Council meeting and evidence) <b>(Evidence – Please attach as Annex X)</b>	
<b>3</b>	Objectives of the Fallback Qualification/Early exit qualification		The objective of this diploma is to provide students who completed the 2 <sup>nd</sup> MBBS course but were unable to pass the 2 <sup>nd</sup> MBBS examination or passed the 2 <sup>nd</sup> MBBS examination but wishes to leave the course before eligible to receive a higher level of a qualification awarded under the MBBS program with the necessary knowledge, technical skills and competencies in Human Biology to work in the health sector, higher education institutes and research institutes.	
<b>4</b>	Programme Outcomes/ Graduate Profile of the Fallback		On completion of the Diploma in Human Biology, the student will	

	Qualification/ Early exit qualification	<b>P01</b> have acquired knowledge of the structure and functions of the normal human body and the mechanisms involved in maintaining a healthy life. <b>P02</b> have a basic knowledge of physiological and metabolic processes to explain their role in health and how abnormalities in them lead to disease. <b>P03</b> be able to apply the basic science knowledge to understand the diseases at the levels of whole body, organ, and tissue, cellular and molecular level. <b>P04</b> be able to apply the knowledge of human biology in various jobs in the health sector and higher education institutes.		
5	Programme Duration and Credit Load of the Fallback Qualification/ Early exit qualification			
	Diploma	Duration: 1 1/2 yrs. During the three semesters a student would have completed the second MBBS program and the components required to complete 30 credits from the contents. Course work: 30 credits Total Credits: 30		
6	Programme Structure: This should give details as below			
	Course code	Course Name	Credit Value	
	PRA1115, PRA1214 PRA2113	Anatomy I Anatomy II Anatomy III	12	
	PRB1114 PRB1212 PRB2112	Biochemistry I Biochemistry II Biochemistry III	08	
	PRP1114 PRP1214 PRP2112	Physiology I Physiology II Physiology III	10	
	Total		30	
7	Targeted Sri Lanka Qualification Framework (SLQF) Level of the Fallback Qualification (Please tick ✓)			
		SLQF Level 5 (Bachelors)	SLQF Level 4 (Higher Diploma)	SLQF Level 3 (Diploma)
				✓
8	Program Assessment Procedure/Rules of the fallback qualification			
	Assessment tools: Anatomy: MCQ, SEQ, Spot and Viva Biochemistry: MCQ, SEQ, OSPE and Viva Physiology: BRQ, MRQ,SEQ, OSPE and Viva			

**For fallback qualification a student**

- a. should obtain an aggregate mark of 40% or above in the 2<sup>nd</sup> MBBS examination for all three subjects separately (Anatomy, Biochemistry and Physiology) at any attempt irrespective of the marks secured from each component and should pass an exit viva held by the department.

or

**For early exit qualification a student**

- b. \*should have passed the 2<sup>nd</sup> MBBS examination and wishes to leave the MBBS course but not satisfy the requirements for Higher Diploma in Human Biology, B.Sc Degree in Health Sciences or MBBS.

\*This criteria does not apply for UGC students according to the UGC Circular No 04/2021

Programme Content				
Course duration	3 semesters			
Course Code	PRA1115, PRA1214, PRA2113			
Course Name	Anatomy			
Credit Value	12			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	80	150	31	339
Course Aim				
Intended Learning Outcomes	On completion of this diploma, the student will be able to, <b>LO1</b> describe the basic anatomical concepts <b>LO2</b> explain the organization of the human body <b>LO3</b> explain the body systems <b>LO4</b> describe the cell <b>LO5</b> explain the tissue types <b>LO6</b> explain basic embryology <b>LO7</b> explain basic medical genetics			
PRA1115	<b>Basic anatomical concepts</b> Introduction to anatomy Histology Basic Embryology Genetics			
PRA1214	<b>Upper limb and thorax</b> Structure of the Upper Limb Structure of the Thorax			
	<b>Cardiovascular and Respiratory system</b> Structure of the Cardiovascular System Structure of the Respiratory System			
	<b>Abdomen, pelvis and perineum</b> Structure of the Abdomen Structure of the Pelvis and Perinium			
	<b>Gastro intestinal system</b> Structure of the Gastrointestinal system			
PRA2113	<b>Genito urinary system</b> Structure of the genito urinary system			
	<b>Lower Limb</b> Structure of the Lower limb			
	<b>Head and neck</b> Structure of the Head and Neck			
	<b>Central nervous system</b> Structure of the Central Nervous System			
Teaching /Learning Methods:	<ul style="list-style-type: none"> <li>Lectures, dissections, tutorial, small group discussions and practicals</li> </ul>			
Assessment Strategy:	<b>Assessment tools:</b> MCQ, SEQ, Spot and Viva			

	<p><b>For fallback qualification a student</b></p> <p>a. should obtain an aggregate mark of 40% or above in the 2<sup>nd</sup> MBBS examination for all three subjects separately (Anatomy, Biochemistry and Physiology) at any attempt irrespective of the marks secured from each component and should pass an exit viva held by the department.</p> <p>or</p> <p><b>For early exit qualification a student</b></p> <p>b. *should have passed the 2<sup>nd</sup> MBBS examination and wishes to leave the MBBS course but not satisfy the requirements for Higher Diploma in Human Biology, B.Sc Degree in Health Sciences or MBBS.</p> <p>*This criteria does not apply for UGC students according to the UGC Circular No 04/2021</p>				
<b>Recommended reading</b>	<ul style="list-style-type: none"><li>• Cunningham's Manual of Anatomy (Vol - I) G. J. Romanes</li><li>• Cunningham's Manual of Anatomy (Vol - II)G. J. Romanes</li><li>• Cunningham's Manual of Anatomy (Vol - III) G. J. Romanes</li><li>• Clinical Anatomy - Harold Ellis, VishyMahadevan</li><li>• Wheatear's Function Histology - Barbara Young , James S. Lowe , Alan Stevens , John W. Heath , Philip J. Deakin</li><li>• Human Embryology (2nd Edition) Prof. Malkanthi S. Chandrasekara</li><li>• Grants Atlas - Anne M.R. Agur, Arthur F. Dalley Clinical Neuroanatomy for Medical Students Richard S. Snell</li><li>• Basic Medical Genetics - Prof. Rohan W Jayasekara</li><li>• Langman's Medical Embryology- T. W. Sadler</li></ul>				
<b>Linkage between Learning Outcomes (LOs) and Program outcomes (POs)</b>					
		<b>POs</b>			
		<b>P01</b>	<b>P02</b>	<b>P03</b>	<b>P04</b>
<b>LOs</b>	<b>L01</b>	H	M	M	L
	<b>L02</b>	H	L	L	M
	<b>L03</b>	M	L	L	L
	<b>L04</b>	M	M	L	M
	<b>L05</b>	H	M	M	L
	<b>L06</b>	L	L	L	M
	<b>L07</b>	L	L	L	M
	H: high      M: medium      L : Low				

Programme Content				
<b>Course duration</b>	3 Semesters			
<b>Course Code</b>	PRB1114, PRB1212, PRB2112			
<b>Course Name</b>	Biochemistry			
<b>Credit Value</b>	8			
<b>Hourly Breakdown</b>	Theory	Practical	Other learning activities	Independent learning
	90	33	30	297
<b>Course Aim</b>				
<b>Intended Learning Outcomes</b>	<p>On completion of this course, the student will be able to</p> <p><b>LO 1</b> describe the biomolecules found in the human body and their importance for health.</p> <p><b>LO 2</b> explain the metabolic pathways and their role in life, how errors in them lead to disease and biochemical principles behind common tests used in diagnostics.</p> <p><b>LO 3</b> explain the principles of human nutrition, nutritional requirements and common human nutritional deficiency diseases.</p>			
<b>Course Contents</b>	PRB1114	<b>Cell Biochemistry</b>		
		Cell structure and functions		
		pH & buffers		
		Bioenergetics		
	PRB1212	<b>Biomolecules</b>		
		Carbohydrates		
		Proteins		
PRB2112	PRB1212	<b>Functional Aspects of Proteins</b>		
		Information transfer		
	PRB1212	Hemoglobin		
		Enzymes		
	PRB2112	Digestion and absorption		
		Plasma proteins		
		<b>Metabolism I</b>		
PRB2112	PRB1212	Carbohydrate metabolism		
		Lipid metabolism		
	PRB2112	<b>Metabolism II</b>		
		Protein metabolism		
PRB2112	PRB2112	Nucleic acid metabolism		
		<b>Nutrition</b>		
	PRB2112	Vitamins		
PRB2112	PRB2112	Principles of nutrition		
		<b>Basic clinical biochemistry</b>		

Teaching /Learning Methods	Lectures, tutorial, and practicals				
Assessment Strategy	<p><b>Assessment tools:</b> MCQ, SEQ, Spot and Viva</p> <p><b>For fallback qualification a student</b></p> <p>a. should obtain an aggregate mark of 40% or above in the 2<sup>nd</sup> MBBS examination for all three subjects separately (Anatomy, Biochemistry and Physiology) at any attempt irrespective of the marks secured from each component and should pass an exit viva held by the department.</p> <p>or</p> <p><b>For early exit qualification a student</b></p> <p>b. *should have passed the 2<sup>nd</sup> MBBS examination and wishes to leave the MBBS course but not satisfy the requirements for Higher Diploma in Human Biology, B.Sc Degree in Health Sciences or MBBS.</p> <p>*This criteria does not apply for UGC students according to the UGC Circular No 04/2021</p>				
Recommended reading	Lippencotts' illustrated Biochemistry, Denise R. Ferrier				
Linkage between Learning Outcomes (LOs) and Program outcomes (POs)					
		POs			
		P01	P02	P03	P04
LOs	LO1	H	M	M	M
	LO2	H	H	H	H
	LO3	H	H	H	H
	H: high      M: medium      L : Low				




PRP1214	<b>Gastrointestinal physiology</b> Mouth and Oesophagus
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PRP2112	Stomach Small intestine Large intestine Liver and gall bladder
	<b>Renal physiology</b> Functions of the kidneys Renal blood flow and renal clearance Renal regulation of electrolytes Counter current mechanism Water balance and diuretics Micturition Renal dysfunction
	<b>Endocrine physiology</b> Introduction to endocrine physiology Hypothalamus and pituitary axis Pituitary and Pituitary dysfunction Thyroid and thyroid dysfunction Adrenal cortex and dysfunction Adrenal medulla and dysfunction Endocrine pancreas Parathyroid gland and calcium metabolism
	<b>Reproductive physiology</b> Male reproductive system Female reproductive system Human sexual response Pregnancy and normal labor Lactation Menopause and Andropause Contraception
	<b>Neurophysiology</b> Introduction to neurophysiology Sensory nervous system Motor nervous system Spinal cord lesions Cranial nerves Physiology of taste and smell Physiology of vision Physiology of hearing and balance Physiology of pain Reflexes – Monosynaptic and polysynaptic Posture, gait and ataxia Basal ganglia – Higher cerebral functions
<b>Teaching /Learning Methods</b>	Lectures, tutorial, and practicals
<b>Assessment Strategy</b>	<b>Assessment tools:</b> BRQ, MRQ,SEQ, OSPE and Viva  <b>For fallback qualification a student</b>

	<p>a. should obtain an aggregate mark of 40% or above in the 2<sup>nd</sup> MBBS examination for all three subjects separately (Anatomy, Biochemistry and Physiology) at any attempt irrespective of the marks secured from each component and should pass an exit viva held by the department.</p> <p>or</p> <p><b>For early exit qualification a student</b></p> <p>b. *should have passed the 2<sup>nd</sup> MBBS examination and wishes to leave the MBBS course but not satisfy the requirements for Higher Diploma in Human Biology, B.Sc Degree in Health Sciences or MBBS.</p> <p>*This criteria does not apply for UGC students according to the UGC Circular No 04/2021</p>				
<b>Recommended reading</b>	<ul style="list-style-type: none"><li>• Ganong's Review of Medical Physiology ,Kim E. Barrett , Susan M. Barman , Scott Boitano , Heddwen Brooks</li><li>• Hutchinsons' Clinical Methods,Michael Glynn,William M Drake</li></ul>				
<b>Linkage between Learning Outcomes (LOs) and Program outcomes (POs)</b>					
		<b>POs</b>			
		<b>P01</b>	<b>P02</b>	<b>P03</b>	<b>P04</b>
<b>LOs</b>	<b>L01</b>	H	H	H	M
	<b>L02</b>	H	H	H	M
	<b>L03</b>	H	H	H	M
	H: high      M: medium      L : Low				

**APPLICATION FORM FOR THE APPROVAL OF FALLBACK QUALIFICATION IN  
HIGHER DIPLOMA IN HUMAN BIOLOGY  
FOR AN EXISTING UNDERGRADUATE DEGREE PROGRAMME AT  
GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY**

Application form for Fallback Qualification				
1	1.1	Name of Fallback Qualification in all three languages, in accordance with SLQF 2015	(English)	Higher Diploma in Human Biology
			(Sinhala)	මානව ජීව විද්‍යාව පිළිබඳ උසස් ඩිප්ලෝමාව
			(Tamil)	மனித உயிரியலில் டிப்ளமோ
	1.2	Abbreviated qualification (Fallback Qualification)	(English)	High. Dip. in HB
2	Programme Offering Entity			
	2.1	University	General Sir John Kotelawala Defence University	
	2.2	Faculty/ Institute	Faculty of Medicine	
	2.3	Department(s) (if applicable)	Department of Pre Clinical Sciences Department of Para-Clinical Sciences	
	2.4	Final Senate Approval for Fallback Qualification	Date: ...../..... /..... Evidence: Yes <input type="checkbox"/> No <input type="checkbox"/> (Date of Senate meeting and evidence) <b>(Evidence – Please attach as Annex X)</b>	
	2.5	Final Council Approval Fallback Qualification	Date: ...../..... /..... Evidence: Yes <input type="checkbox"/> No <input type="checkbox"/> (Date of Council meeting and evidence) <b>(Evidence – Please attach as Annex X)</b>	
3	Objectives of the Fallback Qualification		The objective of this higher diploma is to provide students with the necessary knowledge, skills and competencies in human biology (who have successfully completed 2 <sup>nd</sup> MBBS examination and are unable to complete the 3 <sup>rd</sup> MBBS Part 1 examination) to work in the health sector, higher education institutes and research institutes.	

4	Programme Outcomes/ Graduate Profile of the Fallback Qualification	<p>On completion of the Higher Diploma in Human Biology the student will</p> <p>P01 have acquired knowledge of the structure and functions of the normal human body and the mechanisms involved in maintaining a healthy life.</p>
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		<p>P02 be able to apply the basic science knowledge to understand the diseases at the levels of whole body, organ, and tissue, cellular and molecular.</p> <p>P03 have a basic knowledge of physiological and metabolic processes to explain their role in health and how abnormalities in them lead to disease.</p> <p>P04 have basic knowledge regarding medically important bacteria, viruses, fungi, their role in causing various infectious diseases, microbiological diagnostic methods and basic principles in hospital infection prevention.</p> <p>P05 be able to understand the structure of the human immune system and how it generates an effective immune response against pathogens.</p> <p>P06 have basic knowledge and skills regarding biological and epidemiological aspects of medically important parasites of man, diseases caused by the parasites, pathogenesis, clinical presentation and complications of parasitic diseases, diagnosis, treatment, and prevention and control of the parasitic diseases .</p> <p>P07 have basic knowledge about arthropod vectors that transmit parasitic diseases.</p> <p>P08 develop knowledge, skills and attitudes necessary to improve individual, family and community health as well as disease prevention.</p> <p>P09 have a basic knowledge of the pathological changes that occur in cells, tissues, blood and body fluids due to disease.</p> <p>P010 provide knowledge on the fundamentals of clinical pharmacology as a translational scientific discipline focused on rational drug development</p> <p>P011 develop adequate knowledge of the medico-legal procedures.</p> <p>P012 be able to apply this knowledge in various jobs in the health sector and in higher education institutes.</p>
5	Programme Duration and Credit Load	<p>Programee Duration : 05 semesters (2 ½ years)</p> <p>Credit load : 60 credits</p>

6	<p>Programme Structure: This should give details as below</p> <table border="1"> <thead> <tr> <th>Course code</th> <th>Course Name</th> <th>Credit Value</th> </tr> </thead> <tbody> <tr> <td></td> <td>Anatomy</td> <td>18</td> </tr> <tr> <td></td> <td>Biochemistry</td> <td>12</td> </tr> <tr> <td></td> <td>Physiology</td> <td>16</td> </tr> <tr> <td></td> <td>Microbiology</td> <td>04</td> </tr> <tr> <td></td> <td>Parasitology</td> <td>03</td> </tr> <tr> <td></td> <td>Public Health</td> <td>04</td> </tr> <tr> <td></td> <td>Pathology</td> <td>03</td> </tr> <tr> <td></td> <td>Pharmacology</td> <td>01</td> </tr> <tr> <td></td> <td>Forensic Medicine</td> <td>02</td> </tr> <tr> <td></td> <td>Total</td> <td>63</td> </tr> </tbody> </table>	Course code	Course Name	Credit Value		Anatomy	18		Biochemistry	12		Physiology	16		Microbiology	04		Parasitology	03		Public Health	04		Pathology	03		Pharmacology	01		Forensic Medicine	02		Total	63
Course code	Course Name	Credit Value																																
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7	<p>Targeted Sri Lanka Qualification Framework (SLQF) Level of the Fallback Qualification (Please tick ✓)</p> <table border="1"> <thead> <tr> <th>SLQF Level 5 (Bachelors)</th> <th>SLQF Level 4 (Higher Diploma)</th> <th>SLQF Level 3 (Diploma)</th> </tr> </thead> <tbody> <tr> <td></td> <td>✓</td> <td></td> </tr> </tbody> </table>	SLQF Level 5 (Bachelors)	SLQF Level 4 (Higher Diploma)	SLQF Level 3 (Diploma)		✓																												
SLQF Level 5 (Bachelors)	SLQF Level 4 (Higher Diploma)	SLQF Level 3 (Diploma)																																
	✓																																	
8	<p><b>Program Assessment Procedure / Rules of the fallback qualification</b></p> <p>Students shall complete/pass the 2<sup>nd</sup> MBBS Examination, obtained a minimum of 40 marks for the each of the subjects of the 3<sup>rd</sup> MBBS Prt-1 examination, sit for the 4<sup>th</sup> and 5<sup>th</sup> semester examinations of the Public Health and Family Medicine, Pathology, Pharmacology and 5<sup>th</sup> semester examination of the Forensic Medicine, shall pass the exit viva-voce examination at the completion of the above requirements are qualified for the Higher Diploma in Human Biology Programme.</p>																																	

Programme Content				
Course duration				
Course Code	PRB1101			
Course Name	Biochemistry			
Credit Value	12			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	125	54	37	384
Course Aim				
Intended Learning Outcomes	<p>On completion of this course, the student will be able to</p> <p><b>L01</b> describe the important biomolecules found in the human body and their importance for health.</p> <p><b>L02</b> explain the basic metabolic pathways, how errors in them lead to disease and biochemical principles behind common tests used in diagnostics.</p> <p><b>L03</b> explain the biochemical principles behind common tests used in diagnostics and the abnormalities seen in laboratory reports in biochemical terms.</p> <p><b>L04</b> explain the principles of human nutrition, nutritional requirements and common human nutritional deficiency diseases.</p> <p><b>L05</b> explain the basic principles for planning suitable healthy diet for normal, obese and diabetic persons.</p> <p><b>L06</b> explain the applications of molecular techniques in disease diagnosis and therapeutics.</p>			
Course Contents	<b>Cell Biochemistry</b> Cell structure and functions pH & buffers Bioenergetics Free radicals and antioxidants Hormone action, Cancer & aging			
	<b>Biomolecules</b> Carbohydrates Proteins Lipids Nucleic acids			
	<b>Functional Aspects of Proteins</b> Information transfer Hemoglobin Enzymes Digestion and absorption Plasma proteins			
	<b>Metabolism I</b> Carbohydrate metabolism Diabetes mellitus			
	<b>Metabolism II</b> Protein metabolism Lipid metabolism			



	<b>Molecular Medicine</b> Inborn errors of metabolism Recombinant DNA technology
	<b>Metabolism III</b> Bilirubin metabolism Nucleic acid metabolism Integration of metabolism Liver metabolism
	<b>Nutrition</b> Food and diets Vitamins Micro nutrients Principles of nutrition
	<b>Basic clinical biochemistry</b>
<b>Teaching /Learning Methods</b>	Lectures Tutorials Practicals
<b>Assessment Strategy</b>	Assessment tools : MCQs, SEQs, Spot, Viva  For fall back qualifications Student shall pass the Biochemistry component of the 2 <sup>nd</sup> MBBS examination in maximum of 4 attempts
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Lippencotts' illustrated Biochemistry, Denise R. Ferrier</li> </ul>

Programme Content				
Course duration				
Course Code	PRP1101			
Course Name	Physiology			
Credit Value	16			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	164	44	66	526
Course Aim				
Intended Learning Outcomes	<p>On completion of this course, the student will be able to</p> <p><b>LO 1</b> define basic principles in human physiology.</p> <p><b>LO 2</b> describe sequentially and logically, human physiological processes.</p> <p><b>LO 3</b> explain using clinical examples, listed disturbances in human physiology.</p>			
Course Contents	<p><b>General Physiology</b></p> <p>Body fluid</p> <p>Body fluid compartments and their homeostasis</p> <p>Tissue fluid formation and oedema</p> <p>Starling forces and their derangements</p> <p>Dehydration and IV Fluids</p> <p>Fluid balance and regulation of ECF volume</p> <p>Homeostasis</p> <p>Autonomic Nervous System</p>			
	<p><b>Blood and Immunity</b></p> <p>Haemopoiesis and Haemoglobin</p> <p>Haemostasis, Haemolysis and Jaundice</p> <p>Blood grouping, Blood transfusion, Rh incompatibility</p> <p>Anaemias</p>			
	<p><b>Cardiovascular physiology</b></p> <p>Introduction to CVS</p> <p>Cardiac Output and BP</p> <p>Heart sounds and Murmurs</p> <p>JVP</p> <p>Cardiovascular regulatory mechanisms</p> <p>Cardiovascular homeostasis in health and diseases</p> <p>Electrocardiogram (ECG)</p>			
	<p><b>Respiratory physiology</b></p> <p>Mechanics of Respiration</p> <p>Gas exchange</p> <p>Regulation of Respiratory system</p> <p>Respiratory adjustments in health and disease</p>			
	<p><b>Gastrointestinal physiology</b></p> <p>Mouth and Oesophagus</p> <p>Stomach</p> <p>Small intestine</p> <p>Large intestine</p> <p>Liver and gall bladder</p>			

	<b>Renal physiology</b> Functions of the kidneys Renal blood flow and renal clearance Renal regulation of electrolytes Countercurrent mechanism Water balance and diuretics Micturition Renal dysfunction
	<b>Endocrine physiology</b> Introduction to endocrine physiology Hypothalamus and pituitary axis Pituitary and Pituitary dysfunction Thyroid and thyroid dysfunction Adrenal cortex and dysfunction Adrenal medulla and dysfunction Endocrine pancreas Parathyroid gland and calcium metabolism
	<b>Reproductive physiology</b> Male reproductive system Female reproductive system Human sexual response Pregnancy and normal labor Lactation Menopause and Andropause Contraception
	<b>Neurophysiology</b> Introduction to neurophysiology Sensory nervous system Motor nervous system Spinal cord lesions Cranial nerves Physiology of taste and smell Physiology of vision Physiology of hearing and balance Physiology of pain Reflexes – Monosynaptic and polysynaptic Posture, gait and ataxia Basal ganglia – Higher cerebral functions
<b>Teaching /Learning Methods</b>	Lectures Tutorials Practicals
<b>Assessment Strategy</b>	Assessment tools : MCQs, BRQs, SEQs, OSPE, Viva  For fall back qualifications Student shall pass the Physiology component of the 2 <sup>nd</sup> MBBS examination in maximum of 4 attempts

<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Ganong's Review of Medical Physiology ,Kim E. Barrett , Susan M. Barman , Scott Boitano , Heddwen Brooks</li> <li>• Hutchinsons' Clinical Methods, Michael Glynn,William M Drake</li> </ul>
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Programme Content				
Course duration	02 semesters			
Course Code				
Course Name	Microbiology			
Credit Value	04			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	46	18	09	129
Course Aim				
Intended Learning Outcomes	<p>On completion of this course, the student will be able to</p> <p><b>L01</b> describe pathogenic microorganisms that are commonly encountered (bacteria, viruses and fungi), their habitats, routes of transmission, pathogenesis and infections they cause.</p> <p><b>L02</b> learn the microbiological culture methods done to diagnose common pathogens and to advise on collection and transport of specimens for microbiological investigations.</p> <p><b>L03</b> acquire knowledge and skills on staining, microscopic examination and conducting basic biochemical tests to identify common bacteria and fungi.</p> <p><b>L04</b> learn the principles of common serological and molecular diagnostic tests used in diagnosis of medically important pathogens.</p> <p><b>L05</b> understand how the human immune system works to generate an effective immune response against a specific pathogen</p> <p><b>L06</b> understand the basic principles of infection prevention and control methods used in hospital setup to prevent and control infectious diseases.</p>			
Course Contents	<b>General Bacteriology</b> Introduction to bacteriology, prokaryotes and eukaryotes, Bacterial cell structure Classification of bacteria, pathogenesis & virulence of bacteria. Host parasite relationship, Bacterial genetics			
	<b>Systemic Bacteriology</b> Gram positive cocci Gram negative cocci Gram positive bacilli Gram negative bacilli Mycobacteria Spirochetes Actinomyces/Nocardia Mycoplasma/Chlamydiae/ Rickettsiae Anaerobes Human microbiome and its role			
	<b>Immunology</b> Introduction to Immunology & innate immunity Adaptive immunity			

	<p>Immune response to bacterial, viral and fungal infections</p> <p>Active and passive immunity</p> <p>Immunology – updates and applicability / Antigen and Antibody testing methods</p>
	<p><b>Virology</b></p> <p>Introduction to viruses and their classification</p> <p>Molecular diagnosis of viral infections</p> <p>Serological diagnostic methods for viral diagnosis</p>
	<p><b>Mycology</b></p> <p>Introduction to Mycology</p> <p>Superficial, subcutaneous and systemic mycoses</p> <p>Diagnosis of mycoses</p>
	<p><b>Infection control, disinfection and sterilisation</b></p> <p>Hospital Infection Prevention and Control – Basic concepts</p> <p>Disinfection and sterilization of patient care equipment and environmental surfaces</p>
<b>Teaching /Learning Methods</b>	<p>Lectures</p> <p>Tutorials</p> <p>Practicals</p>
<b>Assessment Strategy</b>	<p>Assessment Tools : MCQs, BRQs, SEQ, OSPE, Practical, Viva</p> <p>For fall back qualifications</p> <p>Student shall obtain a minimum of 40 marks for the Microbiology component of the 3<sup>rd</sup> MBBS Part 1 examination</p>
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Medical Microbiology by David Greenwood, Richard C.B.Slack &amp; John F. Peutherer. 18th Edition. Churchill Livingstone</li> <li>• Mim's Medical Microbiology by Richard Goering, Hazel Dockrell, Mark Zuckerman, Derek Wakelin, Ivan Roitt, Cedreic Mims. 4th Edition, Mosby Elsevier</li> <li>• Cellular and Molecular Immunology by Abbas AK, Lichtman AH.8th Edition, Saunders Publishing</li> </ul>

Content Programme				
Course duration	02 semesters			
Course Code				
Course Name	Parasitology			
Credit Value	03			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	47	20	06	129
Course Aim				
Intended Learning Outcomes	<p>On completion of this course, the student will be able to</p> <p><b>L01</b> acquire the knowledge about disease causing parasites to man, their geographical distribution, life cycle, morphology at different stages, sources of infection and mode of transmission of each parasite.</p> <p><b>L02</b> acquire knowledge about the the parasitic diseases, organs or the systems affected by the parasitic diseases, clinical presentation and the underline pathogenesis of parasitic diseases.</p> <p><b>L03</b> acquire knowledge about laboratory diagnosis of the parasitic diseases.</p> <p><b>L04</b> acquire knowledge about prevention and control of parasitic disease and out line the treatment of the parasitic diseases and the management of patients.</p> <p><b>L05</b> acquire skills to perform stool examination for intestinal parasites and blood film examination and rapid diagnostic methods for malaria and filarial parasites.</p> <p><b>L06</b> acquire knowledge about medically important arthropods with special reference to those commonly found in Sri Lanka.</p> <p><b>L07</b> acquire skills to identify the main genera of disease transmitting mosquitoes and other medically important arthropod vectors commonly found in Sri Lanka.</p>			
Course Contents	<b>Introduction to Parasitology</b>			
	<b>Intestinal Nematodes</b> Introduction to intestinal nematodes and soil transmitted helminths Ascariasis, Hookworm diseases, Trichuriasis, Strongyloidiasis, Enterobiasis			
	<b>Tissue nematodes</b> Introduction Lymphatic filariasis (LF) Life cycle of <i>W bancrofti</i> Pathology, immunology and clinical features of LF Laboratory diagnosis of LF National Programme for Elimination of LF Other important human filarial worms Zoonotic filarial worms			

	<b>Protozoology</b> Introduction to protozoology <b>Intestinal protozoans</b> Amoebiasis Giardiasis Cryptosporidiosis Balantidiasis Cryptosporidiosis Pathogenic free living protozoans  Urogenital protozoans – Trichomoniasis
	<b>Blood protozoans</b> <b>Introduction to blood protozoans</b> Trypanosomiasis and Global preventive programme for trypanosomiasis Leishmaniasis Toxoplasmosis Malaria – Introduction LF of malaria parasites Clinical features of malaria Pathophysiology and immunity to malaria Laboratory diagnosis of malaria Antimalarial drugs and management of malaria National Programme to eliminate malaria
	<b>Medically important arthropods / Entomology</b> Mosquitoes Scabies and mite related diseases Dipterous Flies of medical importance and Myiasis Fleas Ticks Lice Vector control methods
<b>Teaching /Learning Methods</b>	Lectures Tutorial Practicals
<b>Assessment Strategy</b>	Assessment Tools : MCQs, BRQs, SEQ, OSPE, Practical, Viva  For fall back qualifications Student shall obtain a minimum of 40 marks for the Microbiology component of the 3 <sup>rd</sup> MBBS Part 1 examination
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Medical Parasitology by D R Arora. Brijbala Arora – 4<sup>th</sup> Edition</li> <li>• Mansons Tropical Medicine by G. C Cook, Iz Alimuddin.</li> <li>• Parasites of Man by S J Edirisinghe.</li> <li>• Medical Entomology for students by Mike Service – 5<sup>th</sup> Edition</li> </ul>



Programme Content				
Course duration	04 semesters			
Course Code	PAC3101			
Course Name	Public Health			
Credit Value	04			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	48	-	15	241
Course Aim				
Intended Learning Outcomes	<p>On completion of this degree, the student will be able to,</p> <p>LO1 Acquire knowledge of the health care delivery system in Sri Lanka, public health control programmes and the relevant legal framework.</p> <p>LO2 Acquire knowledge, skills and attitudes to assess health status of communities and families and plan and implement appropriate promotive, preventive, curative, and rehabilitative measures within the social, religious, cultural and economic milieu in the community.</p> <p>LO3 Acquire knowledge, skills and attitudes to provide promotive, preventive, curative and rehabilitative care to fulfill the health needs of the individual, family and community with responsibility.</p> <p>LO4 Apply the principles and concepts of epidemiology and statistics and carry out research, describe health issues, assess health status of the community and determine the effects of health interventions in the community.</p>			
Course Contents	<b>Epidemiology</b> Introductory epidemiology Organizing epidemiological data Frequency measures used in epidemiology Public health surveillance Investigation of an outbreak			
	<b>Biostatistics</b> Statistical principles and methods Biostatistics Medical record systems			
	<b>Healthcare Delivery Systems and Demography</b> Concepts of health Disease prevention and Primary Health Care Healthcare systems in Sri Lanka Determinants of health Vital statistics Demographic transition Demographic issues			

	<b>Communicable and Non Communicable Disease Epidemiology</b> Communicable disease epidemiology Notifiable diseases and the notification system Expanded Programme on Immunization Disease campaigns Non Communicable Disease epidemiology
<b>Teaching / Learning methods</b>	<b>Lectures</b> <b>Tutorials</b>
<b>Assessment Strategy:</b>	Assessment Tools : MCQs, BRQs, SEQs  For fall back qualifications Student shall sit for the Public Health and Family Medicine component of the 4 <sup>th</sup> and 5 <sup>th</sup> semester examination of the MBBS degree programme
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Basic Epidemiology. Beaglehole R, Bonita R &amp; Kjellstrom T</li> <li>• Parks text book of Preventive and Social Medicine. Park K.</li> <li>• An introduction to medical statistics. Bland M</li> </ul>

Programme Content				
Course duration	4 semesters			
Course Code	PAT2201			
Course Name	Pathology			
Credit Value	03			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	58	08	15	169
Course Aim				
Intended Learning Outcomes	<p>On completion of this degree, the student will be able to,</p> <p><b>L01</b> demonstrate a disease related vocabulary.</p> <p><b>L02</b> describe the cellular responses to stress and injury.</p> <p><b>L03</b> describe the macroscopic and microscopic changes in tissue that occurs due to the disease process.</p> <p><b>L04</b> briefly explain the basics of carcinogenesis,</p> <p><b>L05</b> describe the morphological features of benign and malignant tumours.</p> <p><b>L06</b> describe alterations observed in plasma and body fluids in common systemic disorders.</p> <p><b>L07</b> describe the principles of test requisition, patient preparation, sample collection and transport requirements related to histopathological investigations.</p>			
Course Contents	<p><b>General pathology</b></p> <p>Introduction to Pathology</p> <p>Acute Inflammation</p> <p>Chronic Inflammation</p> <p>Cellular adaptations</p> <p>Cell Injury and Cell Death</p> <p>Wound healing</p> <p>Hyperaemia, and Congestion</p> <p>Thrombosis and Embolism</p> <p>Ischaemia and Infarction</p> <p>Pathological Calcification</p> <p>Pathological Pigmentation</p> <p>Amyloidosis</p>			
	<p><b>Neoplasia</b></p> <p>Introduction to Neoplasia</p> <p>Carcinogenesis</p> <p>Tumour Nomenclature</p> <p>Clinical manifestations and The Laboratory diagnosis of Tumours</p>			
	<p><b>Respiratory and Cardiovascular Pathology</b></p> <p>Pneumonia</p> <p>Pulmonary Tuberculosis</p> <p>Obstructive Pulmonary Disease</p> <p>Restrictive Airways Disease</p> <p>Lung Tumours</p>			

	Other lung disorders Vascular Pathology Ischaemic heart disease Hypertensive Heart Disease Congenital Heart Disease Cardiomyopathies Myocarditis and Endocarditis Rheumatic heart disease
	<b>Chemical Pathology</b> Introduction to Chemical Pathology Disorders of Water and Electrolytes Disorders of Acid Base Balance Diabetes mellitus Disorders of Lipid Metabolism Plasma Proteins and Enzymes Biochemical Investigations for Liver Disorders Biochemical Investigations for Renal Disorders Disorders of Calcium and Phosphate Metabolism Endocrine Disorders of the Pituitary, Thyroid and Adrenal Glands
<b>Teaching /Learning methods</b>	Lectures Tutorials Practicals Self learning using Museum specimens and teaching aids
<b>Assessment Strategy</b>	Assessment tools : MCQs, BRQs, SEQs  For fall back qualifications Student shall sit for the Pathology component of the 4 <sup>th</sup> and 5 <sup>th</sup> semester examination of the MBBS degree programme
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Basic Pathology. CotronR, Kumar V, Robbins SL</li> <li>• Essential Haematology, Hoffbrand AV, Pettit JE, Moss PAH.</li> <li>• Clinical Chemistry. Marshall WJ, Bangert SK.</li> </ul>

Programme Content				
Course duration	04 semesters			
Course Code	PAP3101			
Course Name	Pharmacology			
Credit Value	01			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	20	-	07	13
Course Aim				
Intended Learning Outcomes	<p>On completion of this degree, the student will be able to,</p> <p>L01 Describe the process of drug discovery and development.</p> <p>L02 Explain the core principles of pharmacodynamics and pharmacokinetics.</p> <p>L03 Provide basic knowledge on the Autonomic system and auticoids.</p> <p>L04 Describe the impact of age, pregnancy, and disease on pharmacokinetics.</p> <p>L04 Describe the basic principles in the assessment of drug effects.</p> <p>L05 Describe antimicrobial drug action and explain the principles of antimicrobial therapy.</p> <p>L06 Demonstrate an understanding of the design and conduct of basic scientific and clinical research.</p> <p>L07 Provide an understanding of good clinical practices and ethical issues involved in pharmaceutical research.</p> <p>L08 Provide basic knowledge to recognize and explain adverse drug reactions, drug – drug, and food - drug interactions.</p> <p>L09 Provide an overview of clinical pharmacotherapy including pharmacovigilance and medication safety.</p>			
Course Contents	<p><b>General pharmacology</b></p> <p>Introduction to Pharmacology</p> <p>Drug discovery and development</p> <p>Clinical Trials, GCP and ethics</p> <p>Medicines regulation</p> <p>Medicines management and concept of essential medicines</p> <p>Pharmacokinetics</p> <p>Pharmacodynamics</p> <p>Adverse drug reactions</p> <p>Anaphylaxis</p> <p>Drug interactions</p> <p>Medication errors</p> <p>Reporting ADRs</p> <p>Dosage forms</p> <p>Evaluation of Sources of Drug Information</p>			

	<b>Autonomic nervous system and Autocoids</b> Autonomic Nervous System Parasympathetic system Sympathetic nervous system Autocoids
	<b>Antimicrobials and Chemotherapy</b> Principles of antimicrobial treatment Beta lactam antibiotics Penicillins Cephalosporins Macrolides, Tetracyclines, Aminoglycosides, sulphonamides Quinolones and urinary antiseptics Antibiotics in combination, newer antibiotics Antimalarials Anthelmintics Antifilarials Antifungals Anti-virals Anti tuberculosis and Leprosy Antimicrobial chemoprophylaxis
<b>Teaching /Learning Methods</b>	Lectures Tutorials Small group discussions
<b>Assessment Strategy</b>	Assessment tools : MCQs, BRQs, SEQs  For fall back qualifications Student shall sit for the Pharmacology component of the 4 <sup>th</sup> and 5 <sup>th</sup> semester examination of the MBBS degree programme
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Rang and Dale's Pharmacology. Rang HP, Dale MM, Ritter JM, Flower RJ. Henderson G.</li> <li>• Clinical Pharmacology. Bennett PN, Brown MJ, Sharma P.</li> </ul>

<b>Programme Content</b>				
<b>Course duration</b>	01 semester (5 <sup>th</sup> semester)			
<b>Course Code</b>	PAF3101			
<b>Course Name</b>	Forensic Medicine			
<b>Credit Value</b>	02			
<b>Hourly Breakdown</b>	Theory	Practical	Other learning activities	Independent learning
	28	-	07	65
<b>Course Aim</b>				
<b>Intended Learning Outcomes</b>	<p>On completion of this degree, the student will be able to,</p> <p>L01 appreciate the functioning of the medico-legal system in Sri Lanka</p> <p>L02 examine a patient with injuries (basic) for medicolegal purposes</p> <p>L03 fill the relevant documents required to be forwarded to courts in Sri Lanka</p> <p>L04 explain definition of death, types of autopsies and basic autopsy techniques</p> <p>L05 explain post-mortem changes and estimation of time since death</p> <p>L06 explain ethics governing medical practice</p> <p>L07 explain the effects of agrochemicals, poisonous plants and gases on human body</p>			
<b>Course Contents</b>	<p><b>Introduction to Forensic Medicine and Injuries</b></p> <p>Introduction to forensic medicine</p> <p>Introduction to Injuries</p> <p>Basic Injury types</p> <p>Categorization of hurt</p> <p>Medico-legal examinations, Medico Legal Examination Form (MLEF) and Medico Legal Report (MLR)</p> <p>Injury patterns</p> <p>Head Injuries</p> <p>Regional Injuries</p> <p>Transportation Injuries</p> <p>Firearm Injuries</p> <p>Explosive Injuries</p> <p>Burns and Scalds</p> <p>Electrocution and Lightning</p> <p><b>Death and its Medico-legal Importance</b></p> <p>Certification of death</p> <p>Inquests</p> <p>Post-mortem examinations</p> <p>Post-mortem changes and time since death</p> <p><b>Sexual Offences, Child abuse, Miscellaneous</b></p> <p>Crime scene investigation</p> <p>Medico-Legal aspects of blood &amp; blood stains</p>			

	Asphyxial deaths Drowning Sudden natural deaths
	<b>Legal and Ethical Procedures, Mass Disasters</b> Court system in Sri Lanka and Expert witness Medical Ethics Sri Lanka Medical Council Medical Negligence Laws relating to medico-legal practice Investigation of a mass disaster Identification of the living and the dead
	<b>Toxicology</b> Introduction to toxicology Agrochemical poisoning Plant poisons Gaseous poisons Ethyl alcohol intoxication Metallic poisons Drugs of abuse Drug overdose Corrosive poisons
	:
	: Assessment tools: MCQs, BRQs One continuous assessment will be held at the end of the 5 <sup>th</sup> semester.
<b>Teaching / Learning methods</b>	Lectures Small group discussions Tutorials
<b>Assessment Strategy</b>	Assessment tools : MCQs, BRQs, SEQs  For fall back qualifications Student shall sit for the Forensic Medicine component of the 5 <sup>th</sup> semester examination of the MBBS degree programme
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Simpsons Forensic Medicine. Payne-James J, Jones R, Manlove J</li> <li>• Essentials of Forensic Medicine and Toxicology. Reddy K S Narayan.</li> </ul>



## Linkage between the programme outcome and the subject components

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2
Anatomy	H	L	M	L	L	L	L	L	M	L	L	M
Biochemistry	L	H	L	L	L	L	L	L	M	M	L	M
Physiology	H	M	H	L	M	L	L	L	M	M	L	M
Microbiology	L	L	L	H	H	L	L	M	L	L	L	H
Parasitology	L	L	L	L	L	H	H	L	L	L	L	M
Public Health	L	L	L	M	L	M	M	H	M	L	M	H
Pathology	H	M	M	M	M	M	L	M	H	M	M	H
Pharmacology	M	M	M	M	M	M	L	L	M	H	L	H
Forensic Medicine	H	L	L	L	L	L	L	L	M	L	H	M

On completion of the Higher Diploma in Human Biology the student will

- P01 have acquired knowledge of the structure and functions of the normal human body and the mechanisms involved in maintaining a healthy life.
- P02 be able to apply the basic science knowledge to understand the diseases at the levels of whole body, organ, and tissue, cellular and molecular.
- P03 have a basic knowledge of physiological and metabolic processes to explain their role in health and how abnormalities in them lead to disease.
- P04 have basic knowledge regarding medically important bacteria, viruses, fungi, their role in causing various infectious diseases, microbiological diagnostic methods and basic principles in hospital infection prevention.
- P05 be able to understand the structure of the human immune system and how it generates an effective immune response against pathogens.
- P06 have basic knowledge and skills regarding biological and epidemiological aspects of medically important parasites of man, diseases caused by the parasites, pathogenesis, clinical presentation and complications of parasitic diseases, diagnosis, treatment, and prevention and control of the parasitic diseases .
- P07 have basic knowledge about arthropod vectors that transmit parasitic diseases.
- P08 develop knowledge, skills and attitudes necessary to improve individual, family and community health as well as disease prevention.
- P09 have a basic knowledge of the pathological changes that occur in cells, tissues, blood and body fluids due to disease.
- P010 provide knowledge on the fundamentals of clinical pharmacology as a translational scientific discipline focused on rational drug development
- P011 develop adequate knowledge of the medico-legal procedures.
- P012 be able to apply this knowledge in various jobs in the health sector and in higher education institutes

**APPLICATION FORM FOR FALLBACK QUALIFICATION FOR THE  
BACHELOR OF SCIENCE DEGREE IN HEALTH SCIENCES  
GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY**

1	1.1	Name of Fallback Qualification in all three languages, in accordance with SLQF 2015	(English)	Bachelor of Science Degree in Health Sciences
			(Sinhala)	සෞඛ්‍ය විද්‍යාව පිළිබඳ විද්‍යාඥ උපාධිය
			(Tamil)	சுகாதார அறிவியலில் இளங்கலல அறிவியல் பட்டம்
	1.2	Abbreviated qualification (Fallback Qualification)	(English)	BSc in Health Sciences
2	Programme Offering Entity			
	2.1	University	General Sir John Kotelawala Defence University	
	2.2	Faculty/ Institute	Faculty of Medicine	
	2.3	Department(s) (if applicable)	Department of Para-Clinical Sciences	
	2.4	Final Senate Approval for Fallback Qualification	Date: ...../ ..... / ..... Evidence: Yes <input type="checkbox"/> No <input type="checkbox"/> (Date of Senate meeting and evidence) <b>(Evidence – Please attach as Annex X)</b>	
	2.5	Final Council Approval Fallback Qualification	Date: ...../ ..... / ..... Evidence: Yes <input type="checkbox"/> No <input type="checkbox"/> (Date of Council meeting and evidence) <b>(Evidence – Please attach as Annex X)</b>	
3	Objectives of the Fallback Qualification		The objective of this degree is to provide the necessary knowledge, technical skills, competencies and attitudes regarding health sciences to students who are unsuccessful at the Final MBBS examination,  a) enabling them to work in the health sector, higher education institutes and research institutes in non clinical positions in the health care industry. b) to pursue graduate or professional school programs	

4	Programme Outcomes/ Graduate Profile of the Fallback Qualification	<p>On completion of the Degree in Health Sciences the student will</p> <p><b>PO1</b> have acquired knowledge of the structure and functions of the normal human body and the mechanisms involved in maintaining a healthy life.</p> <p><b>PO2</b> have a basic knowledge of physiological and metabolic processes in order to explain their role in health and how their abnormalities lead to disease.</p> <p><b>PO3</b> be able to apply basic science knowledge to understand the diseases at the levels of the whole body, organ, tissue, cell and molecule.</p> <p><b>PO4</b> have basic knowledge regarding medically important bacteria, viruses, fungi, their role in causing various infectious diseases, microbiological diagnostic methods and basic principles in prevention of hospital infection.</p> <p><b>PO5</b> have a basic knowledge regarding the structure of the human immune system and how it generates an effective immune response against pathogens.</p> <p><b>PO6</b> have basic knowledge and skills related to parasitic diseases prevalent mainly in Sri Lanka and globally.</p> <p><b>PO7</b> have basic knowledge of arthropod vectors that transmit parasitic diseases.</p> <p><b>PO8</b> develop knowledge, skills and attitudes necessary to improve individual, family and community health as well as prevention of disease.</p> <p><b>PO9</b> have a basic knowledge of the pathological changes that occur in cells, tissues, blood and body fluids due to disease.</p> <p><b>PO10</b> have a basic knowledge regarding drug development, their therapeutic effects, drug absorption, distribution, elimination, drug interactions, adverse effects and measures taken to minimize the harmful effects of drugs.</p> <p><b>PO11</b> develop adequate knowledge of medico-legal procedures.</p>
5	Programme Duration and Credit Load of the Fallback Qualification	
	Degree	The BSc degree is offered to students who have passed the Third MBBS Examination ( part I and Part II) and the components required to complete 90 credits from the contents of this course but have been unsuccessful at the Final MBBS examination.

6	Programme Structure: This should give details as below		
	Course code	Course Name	Credit Value
		Anatomy	18
		Biochemistry	12
		Physiology	16
		Microbiology	04
		Parasitology	04
		Public Health	12
		Pathology	10
		Pharmacology	11
		Forensic Medicine	04
		Total	91
7	Targeted Sri Lanka Qualification Framework (SLQF) Level of the Fallback Qualification (Please tick ✓)		
	SLQF Level 5 (Bachelors)	SLQF Level 4 (Higher Diploma)	SLQF Level 3 (Diploma)
	X		
8	<b>Program Assessment Procedure / Rules of the fallback qualification</b>  Students should complete/pass the 2 <sup>nd</sup> MBBS Examination and Third MBBS Examination (Part I and Part II) pass the exit viva-voce examination for the BSc in Health Sciences.		

Programme Content						
Course duration						
Course Code	PRA1101					
Course Name	Anatomy					
Credit Value	18					
Hourly Breakdown	Theory		Practical	Other learning		Independent learning
				activities (SGDs, Tutorials)		
		96	202	78	524	
Credits	06		07	05		
<b>Course Aim</b>						
<b>Intended Learning Outcomes</b>	<p>On completion of this degree, the student will be able to</p> <p><b>LO1</b> describe the basic anatomical concepts.</p>					

	<p><b>LO2</b> explain the organization of the human body.</p> <p><b>LO3</b> explain the body systems.</p> <p><b>LO4</b> describe the cell.</p> <p><b>LO5</b> explain the tissue types.</p> <p><b>LO6</b> explain basic embryology.</p> <p><b>LO7</b> explain basic medical genetics.</p>
<b>Course Contents</b>	<p><b>Basic anatomical concepts</b>  Introduction to anatomy  Histology  Basic Embryology  Genetics</p>
	<p><b>Upper limb and thorax</b>  Structure of the Upper Limb  Structure of the Thorax</p>
	<p><b>Cardiovascular and Respiratory system</b>  Structure of the Cardiovascular System  Structure of the Respiratory System</p>
	<p><b>Abdomen, pelvis and perineum</b>  Structure of the Abdomen  Structure of the Pelvis and Perinium</p>
	<p><b>Gastro intestinal system</b>  Structure of the Gastrointestinal system</p>
	<p><b>Genito urinary system</b>  Structure of the Gastrointestinal system</p>
	<p><b>Lower Limb</b>  Structure of the Lower limb</p>
	<p><b>Head and neck</b>  Structure of the Head and Neck</p>
	<p><b>Central nervous system</b>  Structure of the Central Nervous System</p>
	<p><b>Teaching /Learning Methods:</b>  Lectures, dissections, tutorial, small group discussions and practicals</p>
	<p><b>Assessment Strategy:</b>  Assessment tools: MCQ, SEQ, Spot, Viva  Should sit for the 3 continuous assessments at the end of semesters 1, 2 and 3 as well as pass the in the 2<sup>nd</sup> MBBS examination.</p>
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Cunningham's Manual of Anatomy (Vol - I) G. J. Romanes</li> <li>• Cunningham's Manual of Anatomy (Vol - II)G. J. Romanes</li> <li>• Cunningham's Manual of Anatomy (Vol - III) G. J. Romanes</li> <li>• Clinical Anatomy - Harold Ellis, VishyMahadevan</li> </ul>

	<ul style="list-style-type: none"> <li>• Wheatear's Function Histology - Barbara Young , James S. Lowe , Alan Stevens , John W. Heath , Philip J. Deakin</li> <li>• Human Embryology (2nd Edition) Prof. Malkanthi S. Chandrasekara</li> <li>• Grants Atlas - Anne M.R. Agur, Arthur F. Dalley Clinical Neuroanatomy for Medical Students Richard S. Snell</li> <li>• Basic Medical Genetics - Prof. Rohan W Jayasekara</li> <li>• Langman's Medical Embryology- T. W. Sadler</li> </ul>
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Programme Content				
Course duration	3 semesters			
Course Code	PRB1101			
Course Name	Biochemistry			
Credit Value	12			
Hourly Breakdown	Theory	Practical	Other learning activities (SGDs and tutorials)	Independent learning
	125	54	37	384
Credits	08	02	02	
Course Aim				
Intended Learning Outcomes	<p>On completion of this course, the student will be able to</p> <p><b>LO1</b> describe the important biomolecules found in the human body and their importance for health.</p> <p><b>LO2</b> explain the basic metabolic pathways, how errors in them lead to disease and biochemical principles behind common tests used in diagnostics.</p> <p><b>LO</b> explain the biochemical principles of common tests used in diagnostics and the abnormalities seen in laboratory reports in biochemical terms.</p> <p><b>LO4</b> explain the principles of human nutrition, nutritional requirements and common human nutritional deficiency diseases.</p> <p><b>LO5</b> explain the basic principles for planning a suitable healthy diet for normal, obese and diabetic</p>			

	<p>persons.</p> <p><b>LO6</b> explain the applications of molecular techniques in disease diagnosis and therapeutics.</p>
<b>Course contents</b>	<p><b>Cell Biochemistry</b>            Cell structure and functions            pH &amp; buffers            Bioenergetics            Free radicals and antioxidants            Hormone action            Cancer and aging</p>
	<p><b>Biomolecules</b>            Carbohydrates            Proteins            Lipids            Nucleic acids</p>
	<p><b>Functional Aspects of Proteins</b>            Information transfer            Hemoglobin            Enzymes            Digestion and absorption            Plasma proteins</p>
	<p><b>Metabolism I</b>            Carbohydrate metabolism            Diabetes mellitus</p>
	<p><b>Metabolism II</b>            Protein metabolism            Lipid metabolism</p>
	<p><b>Molecular Medicine</b>            Inborn errors of metabolism            Recombinant DNA technology</p>
	<p><b>Metabolism III</b>            Bilirubin metabolism            Nucleic acid metabolism            Integration of metabolism            Liver metabolism</p>
	<p><b>Nutrition</b>            Food and diets            Vitamins            Micro nutrients            Principles of nutrition</p>
	<p><b>Basic clinical biochemistry</b></p>
<b>Teaching /Learning Methods</b>	<p>Lectures, tutorial, SGD and practicals</p>
<b>Assessment Strategy</b>	<p>Assessment tools: MCQ, SEQ, Spot, Viva            Should sit for the 2 continuous assessments at the end of semesters 1 and 2 as well as pass the 2<sup>nd</sup> MBBS examination.</p>



<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>Lippencotts' illustrated Biochemistry, Denise R. Ferrier</li> </ul>
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<b>Programme Content</b>				
<b>Course duration</b>	3 Semesters			
<b>Course Code</b>	PRP1101			
<b>Course Name</b>	Physiology			
<b>Credit Value</b>	16			
<b>Hourly Breakdown</b>	Theory	Practical	Other learning activities (SGDs, Tutorials)	Independent learning
	164	44	66	526
<b>Credits</b>	11	01	04	
<b>Course Aim</b>				
<b>Intended Learning Outcomes</b>	<p>On completion of this course, the student will be able to</p> <p><b>LO 1</b> define basic principles in human physiology.</p> <p><b>LO 2</b> describe sequentially and logically, human physiological processes.</p> <p><b>LO 3</b> explain using clinical examples, listed disturbances in human physiology.</p>			
<b>Course Contents</b>	<p><b>General Physiology</b></p> <p>Body fluid</p> <p>Body fluid compartments and their homeostasis</p> <p>Tissue fluid formation and oedema</p> <p>Starling forces and their derangements</p> <p>Dehydration and IV Fluids</p> <p>Fluid balance and regulation of ECF volume</p> <p>Homeostasis</p>			
	<p><b>Excitable tissues Automomic nervous system</b></p> <p>Parasympathetic nervous system</p> <p>Sympathetic nervous system</p>			

	<b>Blood and Immunity</b> Haemopoiesis and Haemoglobin Haemostasis, Haemolysis and Jaundice Blood grouping, Blood transfusion, Rh incompatibility Anaemias
	<b>Cardiovascular physiology</b> Introduction to CVS Cardiac Output and BP Heart sounds and Murmurs JVP Cardiovascular regulatory mechanisms Cardiovascular homeostasis in health and diseases Electrocardiogram (ECG)
	<b>Respiratory physiology</b> Mechanics of Respiration Gas exchange Regulation of Respiratory system Respiratory adjustments in health and disease
	<b>Gastrointestinal physiology</b> Mouth and Oesophagus Stomach Small intestine Large intestine Liver and gall bladder
	<b>Renal physiology</b> Functions of the kidneys Renal blood flow and renal clearance Renal regulation of electrolytes Counter current mechanism Water balance and diuretics Micturition Renal dysfunction
	<b>Endocrine physiology</b> Introduction to endocrine physiology Hypothalamus and pituitary axis Pituitary and Pituitary dysfunction Thyroid and thyroid dysfunction Adrenal cortex and dysfunction Adrenal medulla and dysfunction Endocrine pancreas Parathyroid gland and calcium metabolism
	<b>Reproductive physiology</b> Male reproductive system Female reproductive system Human sexual response Pregnancy and normal labor Lactation Menopause and Andropause Contraception

	<b>Neurophysiology</b> Introduction to neurophysiology Sensory nervous system Motor nervous system Spinal cord lesions Cranial nerves Physiology of taste and smell Physiology of vision Physiology of hearing and balance Physiology of pain Reflexes – Monosynaptic and polysynaptic Posture, gait and ataxia Basal ganglia – Higher cerebral functions
<b>Teaching /Learning Methods</b>	Lectures, tutorial, SGD and practicals
<b>Assessment Strategy</b>	Assessment tools: MCQ, SEQ, OSPE, Viva Should sit for 2 continuous assessments at the end of semesters 1 and 2 as well as pass the 2 <sup>nd</sup> MBBS examination.
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>Ganong's Review of Medical Physiology ,Kim E. Barrett , Susan M. Barman , Scott Boitano , Heddwen Brooks</li> <li>Hutchinsons' Clinical Methods,Michael Glynn,William M Drake</li> </ul>

<b>Programme Content</b>				
<b>Course duration</b>	Two semesters			
<b>Course Code</b>	PA			
<b>Course Name</b>	Microbiology			
<b>Credit Value</b>	4			
<b>Hourly Breakdown</b>	Theory	Practical	Other learning activities (tutorials)	Independent learning
	138	18	10	126
<b>Credits</b>	03	00	01	
<b>Course Aim</b>				

<b>Intended Learning Outcomes</b>	<p>On completion of this course, the student will</p> <p><b>LO1</b> be able to describe pathogenic microorganisms that are commonly encountered (bacteria, viruses and fungi), their habitats, routes of transmission, pathogenesis and infections they cause.</p> <p><b>LO2</b> have knowledge of microbiological culture methods used to diagnose common pathogens and be able to advise on collection and transport of specimens for microbiological investigations.</p> <p><b>LO3</b> acquire knowledge and skills on staining, microscopic examination and conducting basic biochemical tests to identify common bacteria and fungi.</p> <p><b>LO4</b> have knowledge of the principles of common serological and molecular diagnostic tests used in diagnosis of medically Important pathogens.</p> <p><b>LO5</b> acquire knowledge as to how the human immune system generates an effective immune response against a specific pathogen.</p> <p><b>LO6</b> be able to state the basic principles of infection prevention and control methods used in hospital setup.</p> <p>.</p>
<b>Course contents</b>	<p><b>General Bacteriology</b>  Introduction to bacteriology  Classification of bacteria, pathogenesis &amp; virulence of bacteria.  Host parasite relationship,  Culture &amp; identification of bacteria  Bacterial genetics</p> <hr/> <p><b>Systemic Bacteriology</b>  Gram positive cocci  Gram negative cocci  Gram positive bacilli  Gram negative bacilli  Mycobacteria  Spirochetes  Actinomyces/Nocardia  Mycoplasma/Chlamydiae/ Rickettsiae  Anaerobes</p>

	Human microbiome and its role
	<b>Immunology</b> Introduction to Immunology & innate immunity Adaptive immunity Immune response to bacterial, viral and fungal infections Active and passive immunity Immunology – updates and applicability / Antigen and Antibody testing methods
	<b>Virology</b> Introduction to viruses and their classification Molecular diagnosis of viral infections Serological diagnostic methods for viral diagnosis
	<b>Mycology</b> Introduction to Mycology Superficial, subcutaneous and systemic mycoses Diagnosis of mycoses
	<b>Infection control, disinfection and sterilisation</b> Hospital Infection Prevention and Control – Basic concepts Disinfection and sterilization of patient care equipment and environmental surfaces
<b>Teaching /Learning Methods</b>	Lectures, tutorial, and practicals
<b>Assessment Strategy</b>	Assessment tools: MCQ, SEQ, Practical exam, OSPE, Viva Should sit for the 2 continuous assessments at the end of semesters 4 and 5 as well as pass the Third MBBS Part I Examination.
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Medical Microbiology by David Greenwood, Richard C.B Slack &amp; John F Peutherer.</li> <li>• Mims Medical Microbiology by Richard Goering, Hazel Dockrell, Mark Zukerman, Derek Wakelin, Ivan Roitt, Cedreic Mims.</li> <li>• Cellular and molecular immunology by Abbas AK, Lichtman AH.</li> </ul>

<b>Programme Content</b>				
<b>Course duration</b>	Two semesters			
<b>Course Code</b>	PA			
<b>Course Name</b>	Parasitology			
<b>Credit Value</b>	4			
<b>Hourly Breakdown</b>	Theory	Practical	Other learning activities (tutorials)	Independent learning
	48	12	11	129
<b>Credits</b>	03	00	01	
<b>Course Aim</b>				
<b>Intended Learning Outcomes</b>	<p>On completion of this course, the student will have acquired</p> <p><b>LO1</b> knowledge regarding human disease causing parasites, their geographical distribution, life cycle, morphology of different stages, sources of infection and mode of transmission.</p> <p><b>LO2</b> knowledge about the parasitic diseases, organs / systems affected, clinical presentation and underlying pathogenesis.</p> <p><b>LO3</b> knowledge about laboratory diagnosis of parasitic diseases.</p> <p><b>LO4</b> knowledge about prevention and control of parasitic disease.</p> <p><b>LO5</b> skills to perform stool examination for intestinal parasites, blood film examination and rapid diagnostic methods for malaria and filarial parasites</p> <p><b>LO6</b> knowledge about medically important arthropods with special reference to those commonly found in Sri Lanka.</p> <p><b>LO7</b> skills to identify the main genera of disease transmitting mosquitoes and other medically important arthropod vectors</p>			

	commonly found in Sri Lanka.
<b>Course contents</b>	Introduction to parasitology
	<p><b>Intestinal nematodes</b>  Introduction to intestinal nematodes and soil transmitted helminthes  Ascariasis  Anchylostomiasis  Trichuriasis  Stroglyoidiasis  Enterobiasis</p> <p><b>Tissue nematodes</b>  Introduction to lymphatic filariasis  Life cycle of W bancrofti  Pathology, immunology of LF  Laboratory diagnosis of LF  Management of LF (not drug management)  National programme for elimination of LF  Other important human filarial worms  Zoonotic filarial worms</p> <p><b>Protozoology</b>  Introduction to protozoology  <b>Intestinal protozans</b>  Amoebiasis  Giardiasis  Cryptosporidiosis  Balantidiasis  Pathogenic free living protozoans  Urogenital protozoans - Trichomoniasis  <b>Blood Protozoans</b>  Introduction to blood protozoans  Trypanosomiasis and global preventive programme for trypanosomiasis  Leishmaniasis  Toxoplasmosis  Malaria  Introduction  LF of malaria parasite  Features of malaria  Pathophysiology and immunity to malaria  Laboratory diagnosis of malaria  National programme to eliminate malaria</p>

	<b>Medically important arthropods/Entomology</b> Mosquitoes Scabies and mite related diseases Dipterous Flies of medical importance and Myiasis Fleas Ticks Lice Vector control methods
<b>Teaching /Learning Methods</b>	Lectures, tutorial, and practicals
<b>Assessment Strategy</b>	Assessment tools: MCQ, SEQ, Practical exam, OSPE, Viva Should sit for the 2 continuous assessments at the end of semesters 4 and 5 as well as pass the Third MBBS Part I Examination.
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Mansons Tropical Medicine by G. C Cook, Iz Alimuddin.</li> <li>• Medical Parasitology by D R Arora. Brijbala Arora.</li> <li>• Parasites of Man by S J Edirisinghe.</li> </ul>



Programme Content				
Course duration	4 semesters			
Course Code	PAC3101			
Course Name	Public Health			
Credit Value	12			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	147	-	36	417
Credits				
Course Aim	10	-	02	
Intended Learning Outcomes	<p>On completion of this course, the student will be able to,</p> <p><b>LO1</b> acquire knowledge, skills and attitudes to assess health status of communities and families, plan and implement appropriate promotive, preventive, curative, and rehabilitative measures within the social, religious, cultural and economic milieu in the community.</p> <p><b>LO2</b> communicate effectively with the community and health care team for health promotion and disease prevention in order to improve health and prevent disease.</p> <p><b>LO3</b> acquire knowledge, skills and attitudes to provide promotive, preventive, curative and rehabilitative care to fulfill the health needs of the individual, family and community with</p>			

	<p>responsibility.</p> <p><b>LO4</b> apply the principles and concepts of epidemiology and statistics and carry out research, describe health issues, assess health status of the community and determine the effects of health interventions in the community.</p> <p><b>LO5</b> plan, conduct and report research using a scientific and systematic approach to develop skills of critical thinking, logical reasoning and appraisal of medical evidence.</p> <p><b>LO6</b> demonstrate qualities of a healthcare professional who applies ethical principles in public health, in conducting research and in one's personal life.</p> <p><b>LO7</b> develop commitment to educate the family and community to promote health and prevent disease.</p> <p><b>LO8</b> acquire knowledge of the health care delivery system in Sri Lanka, public health control programmes and the relevant legal framework.</p> <p><b>LO9</b> develop appropriate attitudes towards personal and professional development through reflective practice and life-long learning.</p>
<b>Course Contents</b>	<p><b>Epidemiology</b> Introductory epidemiology Measures of central tendency and dispersion Organizing epidemiological data Frequency measures used in epidemiology Public health surveillance Investigation of an outbreak</p> <p><b>Biostatistics</b> Statistical principles and methods Biostatistics Medical record systems</p> <p><b>Healthcare Delivery Systems and Demography</b> Concepts of health Disease prevention and primary health care Healthcare systems in sri Lanka Determinants of health Vital statistics</p>

	Demographic transition Demographic issues
	<b>Communicable and Non Communicable Disease Epidemiology</b> Communicable disease epidemiology Notifiable diseases and the notification system Expanded programme on immunisation Disease campaigns Non communicable disease epidemiology
	<b>Maternal and Child Health</b> Maternal and Child Health Family Planning
	<b>Environmental and Occupational Health</b> Environmental health Occupational health
	<b>Behavioural Sciences, Management and Nutrition</b> Communication principles Health communication Communication skills Management principles Behavior change theories Adult education principles Medical anthropology Medical sociology Health promotion Behaviour change communication Community participation Public health nutrition Disaster management Health economics
	<b>Research Project</b> Research methodology Conduct a research and submit the report for evaluation.
	<b>Teaching /Learning Methods:</b> Lectures, tutorial, small group discussions.
	<b>Assessment Strategy:</b> Assessment tools: MCQ, SEQ, OSCE/ OSPE, Viva Should sit for the 3 continuous assessments at the end of semesters 4, 5 and 6 as well as pass the 3rd MBBS Part II Examination.
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Basic Epidemiology. Beaglehole R, Bonita R &amp; Kjellstrom T</li> <li>• Parks text book of Preventive and Social Medicine. Park K.</li> <li>• An introduction to medical statistics. Bland M</li> </ul>

<b>Programme Content</b>				
<b>Course duration</b>	4 semesters			
<b>Course Code</b>	PAT2201			
<b>Course Name</b>	Pathology			
<b>Credit Value</b>	10			
<b>Hourly Breakdown</b>	Theory	Practical	Other learning activities (tutorials)	Independent learning
	130	15	23	332
<b>Credits</b>	09	00	01	
<b>Course Aim</b>				
<b>Intended Learning Outcomes</b>	<p>On completion of this course, the student will be able to,</p> <p><b>LO1</b> demonstrate a disease related vocabulary.</p> <p><b>LO2</b> describe the cellular responses to stress and injury.</p> <p><b>LO3</b> describe the macroscopic and microscopic changes in tissue that occur due to the disease process.</p>			

	<p><b>LO4</b> briefly explain the basics of carcinogenesis,</p> <p><b>LO5</b> describe the morphological features of benign and malignant tumours.</p> <p><b>LO6</b> describe alterations observed in plasma and body fluids in common systemic disorders.</p> <p><b>LO7</b> describe the mechanisms of common disease processes involving the blood cells (red cells, white cells, platelets) and the coagulation system.</p> <p><b>LO8</b> describe the principles of test requisition, patient preparation, sample collection and transport requirements related to histopathological, common haematological and biochemical investigations.</p>
<b>Course Contents</b>	<p><b>General pathology</b>  Introduction to pathology  Acute inflammation  Chronic inflammation  Cellular adaptations  Cell injury and cell death  Wound healing  Hyperaemia, and congestion  Thrombosis and embolism  Ischaemia and infarction  Pathological calcification  Pathological pigmentation  Amyloidosis</p> <p><b>Neoplasia</b>  Introduction to neoplasia  Carcinogenesis  Tumour nomenclature  Clinical manifestations and the laboratory diagnosis of tumours</p> <p><b>Respiratory and Cardiovascular Pathology</b>  Pneumonia  Pulmonary tuberculosis  Obstructive pulmonary disease  Restrictive airways disease  Lung tumours  Other lung disorders  Vascular pathology  Ischaemic heart disease</p>

	<p>Hypertensive heart disease  Congenital heart disease  Cardiomyopathies  Myocarditis  Endocarditis  Rheumatic heart disease</p>
	<p><b>Chemical Pathology</b>  Introduction to chemical pathology  Disorders of water and electrolytes  Disorders of acid base balance  Diabetes mellitus  Disorders of lipid metabolism  Plasma proteins and enzymes  Biochemical investigations for liver disorders  Biochemical investigations for renal disorders  Disorders of calcium and phosphate metabolism  Disorders of the pituitary, thyroid and adrenal glands</p>
	<p><b>GIT, Hepatobiliary and Pancreatic Pathology</b>  Disorders of the oesophagus  Non neoplastic disorders of the stomach  Neoplastic disorders of the stomach  Inflammatory bowel disease  Malabsorption syndromes  Diverticular disease  Developmental anomalies of the intestine  Appendicitis  Infectious disease of the intestine  Neoplasms of the small and large intestine  Introduction to liver pathology  Alcoholic liver disease  Non alcoholic fatty liver disease  Metabolic liver diseases  Circulatory disturbances of the liver  Tumours of the liver  Pathology of the biliary system  Pathology of the pancreas</p>
	<p><b>Haematology</b>  Introduction to haematology  Overview of anaemia  Iron metabolism and hypochromic microcytic anaemia  Macrocytic anaemia  Haemolytic anaemia  Haemoglobinopathy  Bone marrow failure and aplastic anaemia  Myeloproliferative disorders, leukaemia and myeloma  Bleeding disorders and thrombosis  Transfusion medicine</p>
	<p><b>Renal pathology, Pathology of the Female Genital Tract and Male Genital Tract</b></p>

	<p>Introduction to renal pathology Acute and chronic pyelonephritis Glomerular diseases Cystic diseases of the kidney Renal stones and hydronephrosis The kidney in hypertension and diabetes Tumours of the urinary system Cervical pathology Uterine pathology Ovarian pathology Gestational trophoblastic disease Pathology of the prostate Pathology of the testis</p>
	<p><b>Pathology of the Central nervous system, Thyroid, Breast, Bone and Reticuloendothelial system</b> Intra crainial haemorrhages and infarctions Infections of the CNS Tumours of the CNS Common thyroid pathology Ommon Breast pathology Common bone pathology Pathology of the lymph node</p>
	<p><b>Teaching /Learning Methods:</b> Lectures, dissections, tutorial, and practicals Self learning using Museum specimens and teaching aids.</p>
	<p><b>Assessment Strategy:</b> Assessment tools: MCQ, SEQ, OSPE, Viva Should sit for the 3 continuous assessments at the end of semesters 4, 5 and 6 as well as pass the 3rd MBBS Part II Examination.</p>
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Basic Pathology. CotronR, Kumar V, Robbins SL</li> <li>• Essential Haematology,HoffbrandAV, Pettit JE, Moss PAH.</li> <li>• Clinical Chemistry. Marshall WJ, Bangert SK.</li> </ul>

Programme Content				
<b>Course duration</b>	4 semesters			
<b>Course Code</b>	PAP 3101			
<b>Course Name</b>	Pharmacology			
<b>Credit Value</b>	11			
<b>Hourly Breakdown</b>	Theory	Practical	Other learning activities (tutorials, SGD)	Independent learning
	127	-	45	378
<b>Credits</b>	08	-	03	
<b>Course Aim</b>				
<b>Intended Learning Outcomes</b>	On completion of this course, the student will be able to,			

	<p><b>LO1</b> describe the basic principles of clinical pharmacology.</p> <p><b>LO2</b> describe the basic principles of pharmacokinetics.</p> <p><b>LO3</b> explain adverse drug reactions, drug – drug, and food - drug interactions.</p> <p><b>LO4</b> explain the importance of the essential medicines list (EML), its specific uses.</p> <p><b>LO5</b> State the processes and ethical issues involved in pharmaceutical research.</p> <p><b>LO6</b> describe and explain the chemistry, pharmacokinetics, Pharmacodynamics of commonly used medicines in the EML.</p>
<b>Course Contents</b>	<p><b>General pharmacology</b>  Introduction to Pharmacology  Drug discovery and development  Clinical Trials, GCP and ethics  Medicines regulation  Medication adherence, compliance and concordance  Medicines management and concept of essential medicines  Pharmacokinetics  Pharmacodynamics  Adverse drug reactions  Anaphylaxis  Drug interactions  Medication errors  Reporting ADRs  Dosage forms  Evaluation of Sources of Drug Information</p> <p><b>Autonomic nervous system and Autocoids</b>  Autonomic Nervous System  Parasympathetic system  Sympathetic nervous system  Autocoids</p> <p><b>Antimicrobials and Chemotherapy</b>  Principles of antimicrobial treatment  Beta lactam antibiotics  Penicillins  Cephalosporins  Macrolides, Tetracyclines, Aminoglycosides, sulphonamides  Quinolones and urinary antiseptics  Antibiotics in combination, newer antibiotics</p>



	Antimalarials Antihelminthics Antifilarials Antifungals Anti-virals Anti tuberculosis and Leprosy Antimicrobial chemoprophylaxis
	<b>Cardiovascular system Pharmacology</b> Introduction to drugs used in cardiovascular disease Beta blockers, Alpha blockers Calcium channel blockers Nitrates Drugs acting on the renin angiotensin system Antiarrhythmics Lipid lowering drugs Diuretics Anitcoagulants, Antiplatelet and thrombolytic agents Drugs in acute and chronic heart failure
	<b>Respiratory Pharmacology</b> Drugs used for management of asthma and COPD Cough syrups and antihistamines
	<b>Gastrointestinal System</b> Emetics and Anti-emetics Drugs in treatment of peptic ulcer disease ORS and Intravenous fluids Prokinetics, laxatives and anti-diarrhoeals
	<b>Anaemia and the Haemopoietic System</b> Drugs used in anaemia, Vit B12, Folate and Iron therapy Drugs affecting the haematopoietic system Vitamins
	<b>Musculoskeletal System</b> Paracetamol & Cox 2 inhibitors, Non-steroidal anti-inflammatory drugs (NSAIDs) Disease Modifying anti rheumatic drugs
	<b>Endocrine Pharmacology</b> Introduction to endocrine pharmacology and principles of Hormone Rreplacement Therapy Disorders of hypothalamus, Anterior and Posterior Pitiutary Thyroid & anti-thyroid drugs Adrenal cortex- Glucocorticoids and Mineralocorticoids Drugs in bone disorders- Parathyroid, Calcium an phosphate homeostasis Vitamin D Drugs used in Diabetes, Insulin Oral hypoglycemic agents Steroids Oestrogens and Oral Contraceptive Pills Hormone Replacement Therapy

	Androgens and drugs for erectile dysfunction Drugs acting on the uterus, tocolytics
	<b>Drugs used in Dermatology, ENT and Eye</b> Drugs used in Dermatology Drugs used in Diseases of Eye, Ear and Nose
	<b>Drugs used in the Central Nervous System</b> Introduction to drugs used in CNS disorders Local anesthetics General anesthetics Drugs used in motor disorders – Drugs in Parkinson’s Disease, drugs for spasticity Drugs used in epilepsy Opioid analgesics Drugs used for depression Drugs used for bipolar disorders Antipsychotics Drugs used in anxiety and sleep disorders Psychostimulants Ethanol & alcohol
	<b>Teaching /Learning Methods:</b> Lectures, tutorial, small group discussions.
	<b>Assessment Strategy:</b> Assessment tools: MCQ, SEQ, OSPE, Viva Should sit for the 3 continuous assessments at the end of semesters 4, 5 and 6 as well as pass the 3rd MBBS Part II Examination.
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Rang and Dale’s Pharmacology. Rang HP, Dale MM, Ritter JM, Flower RJ. Henderson G.</li> <li>• Clinical Pharmacology. Bennett PN, Brown MJ, Sharma P.</li> </ul>

Programme Content				
<b>Course duration</b>	3 semesters			
<b>Course Code</b>	PAF3101			
<b>Course Name</b>	Forensic Medicine			
<b>Credit Value</b>	4			
<b>Hourly Breakdown</b>	Theory	Practical	Other learning activities	Independent learning
	61	-	09	130
<b>Credits</b>	04	-	00	
<b>Course Aim</b>				
<b>Intended Learning Outcomes</b>	On completion of this course, the student will be able to,  <b>LO1</b> appreciate the functioning of the medico-legal			

	<p>system in Sri Lanka.</p> <p><b>LO2</b> make observations at post- mortem examinations.</p> <p><b>LO3</b> identify injuries according to their severity.</p> <p><b>LO5</b> identify common poisons.</p> <p><b>LO7</b> observe the ethics governing the medical practice.</p> <p><b>LO8</b> develop personal attributes of compassion, honesty and integrity in relationships with colleagues, families, communities and the medical profession.</p>
<b>Course Contents</b>	<p><b>Introduction to Forensic Medicine and Injuries</b>  Introduction to forensic medicine  Introduction to injuries  Basic injury types  Categorization of hurt  The MLEF and MLR  Injury patterns  Head injuries  Regional injuries  Transportation injuries  Firearm injuries  Explosive injuries  Burns and scalds  Electrocution and lightening</p> <p><b>Death and its Medico-legal Importance</b>  Basic knowledge regarding inquests  Post-mortem changes and time since death.</p> <p><b>Legal and Ethical Procedures, Mass Disasters</b>  Court system in Sri Lanka and Expert witness  Medical Ethics  Sri Lanka Medical Council  Medical Negligence  Laws relating to medico-legal practice  Investigation of a mass disaster  Identification of the living and the dead</p> <p><b>Toxicology</b>  Introduction to toxicology  Agrochemical poisoning  Plant poisons  Gaseous poisons  Ethyl alcohol intoxication  Metallic poisons  Drugs of abuse</p>

	Drug overdose Corrosive poisons
	<b>Teaching /Learning Methods:</b> Lectures, dissections, tutorial and small group discussions
	<b>Assessment Strategy:</b> Assessment tools: MCQ, SEQ, OSPE, Viva Should sit for 3 continuous assessments at the end of semesters 5 and 6 and 7 as well as pass the 3rd MBBS Part II Examination.
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>• Simpsons Forensic Medicine. Payne-James J, Jones R, Manlove J</li> <li>• Essentials of Forensic Medicine and Toxicology. Reddy K S Narayan.</li> </ul>

### Linkage between Programme outcomes and Subjects

	Programme Outcomes										
Subjects	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011
Anatomy	H	L	L	L	L	L	L	L	L	L	L
Physiology	L	H	L	L	M	L	L	L	L	L	L
Biochemistry	L	L	H	L	L	L	L	L	L	L	L
Microbiology	L	L	L	H	H	L	L	M	M	L	L
Parasitology	L	L	L	L	L	H	H	L	M	M	L
Public Health	L	L	L	M	L	M	M	H	L	L	L
Pathology	H	H	H	L	M	L	L	M	H	L	L
Pharmacology	L	H	M	M	M	M	L	L	L	H	L
Forensic Medicine	H	L	L	L	L	L	L	L	M	L	H

### Programme outcomes

**PO1** have acquired knowledge of the structure and functions of the normal human body and the mechanisms involved in maintaining a healthy life.

**PO2** have a basic knowledge of physiological and metabolic processes in order to explain their role in health and how their abnormalities lead to disease.

**PO3** be able to apply basic science knowledge to understand the diseases at the levels of the whole body, organ, tissue, cell and molecule.

**PO4** have basic knowledge regarding medically important bacteria, viruses, fungi, their

role in causing various infectious diseases, microbiological diagnostic methods and basic principles in prevention of hospital infection.

- PO5** have a basic knowledge regarding the structure of the human immune system and how it generates an effective immune response against pathogens.
- PO6** have basic knowledge and skills related to parasitic diseases prevalent mainly in Sri Lanka and globally.
- PO7** have basic knowledge of arthropod vectors that transmit parasitic diseases.
- PO8** develop knowledge, skills and attitudes necessary to improve individual, family and community health as well as prevention of disease.
- PO9** have a basic knowledge of the pathological changes that occur in cells, tissues, blood and body fluids due to disease.
- PO10** have a basic knowledge regarding drug development, their therapeutic effects, drug absorption, distribution, elimination, drug interactions, adverse effects and measures taken to minimize the harmful effects of drugs.
- PO11** develop adequate knowledge of medico-legal procedures.

**APPLICATION FOR APPROVAL OF FALL-BACK QUALIFICATION FOR AN  
EXISTING UNDERGRADUATE DEGREE PROGRAMME AT  
GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY**

<b>1</b>	<b>1.1</b>	Name of Fallback Qualification in all three languages, in accordance with SLQF 2015	(English)	Diploma in Human Biology
			(Sinhala)	මානව ජීව විද්‍යා ඩිප්ලෝමාව
			(Tamil)	மனித உயிரியலில் டிப்ளமோ
	<b>1.2</b>	Abbreviated qualification (Fallback Qualification)	(English)	Dip (Human Biology)
<b>2</b>	Programme Offering Entity			
	<b>2.1</b>	University	General Sir John Kotelawala Defence University	
	<b>2.2</b>	Faculty/ Institute	Faculty of Medicine	
	<b>2.3</b>	Department(s) (if applicable)	Department of Pre-Clinical Sciences	
	<b>2.4</b>	Final Senate Approval for Fallback Qualification	Date: ...../..... /..... Evidence: Yes <input type="checkbox"/> No <input type="checkbox"/> (Date of Senate meeting and evidence) <b>(Evidence – Please attach as Annex X)</b>	
	<b>2.5</b>	Final Council Approval Fallback Qualification	Date: ...../..... /..... Evidence: Yes <input type="checkbox"/> No <input type="checkbox"/> (Date of Board of Management meeting and evidence) <b>(Evidence – Please attach as Annex X)</b>	
<b>3</b>	Objectives of the Fallback Qualification		The objective of this diploma is to provide students who completed the 2 <sup>nd</sup> MBBS course but were unable to meet the requirements to pass the 2 <sup>nd</sup> MBBS examination, the necessary knowledge, technical skills and competencies in Human Biology to work in the health sector, higher education institutes and research institutes.	
<b>4</b>	Programme Outcomes/ Graduate Profile of the Fallback Qualification		On completion of the Diploma in Human Biology, the student will  <b>PO1</b> have acquired knowledge of the structure and functions of the normal human body and the mechanisms involved in	

		maintaining a healthy life. <b>P02</b> have basic knowledge of physiological and metabolic processes to explain their role in health and how abnormalities in them lead to disease. <b>P03</b> be able to apply the basic science knowledge to comprehend the diseases at the levels of whole body, organ, and tissue, cellular and molecular level. <b>P04</b> be able to apply the knowledge of human biology in various jobs in the health sector and higher education institutes.		
5	Programme Duration and Credit Load of the Fallback Qualification			
	Diploma	Duration: 1 1/2 yrs. During the three semesters a student would have completed the second MBBS programme and the curriculum contents required to complete 30 credits. Course work: 30 credits Total Credits: 30		
6	Programme Structure: This should give details as below			
		Course code	Course Name	Credit Value
		PRA1115 PRA1214 PRA2113	Anatomy I Anatomy II Anatomy III	12
		PRB1114 PRB1212 PRB2112	Biochemistry I Biochemistry II Biochemistry III	08
		PRP1114 PRP1214 PRP2112	Physiology I Physiology II Physiology III	10
		Total		30
7	Targeted Sri Lanka Qualification Framework (SLQF) Level of the Fallback Qualification (Please tick ✓)			
		SLQF Level 5 (Bachelors)	SLQF Level 4 (Higher Diploma)	SLQF Level 3 (Diploma)
				✓
8	Program Assessment Procedure/Rules of the fallback qualification			
	<b>Assessment tools:</b> Anatomy: MCQ, SEQ, Spot and Viva Biochemistry: MCQ, SEQ, OSPE and Viva Physiology: BRQ, MRQ, SEQ, OSPE and Viva			
	<b>For fallback qualification a student should obtain an aggregate mark of 40% or above in the 2<sup>nd</sup> MBBS examination in all three subjects, Anatomy, Biochemistry and Physiology subject to a minimum 40% of each subject at any attempt irrespective of the marks secured from each component and should pass an exit viva conducted by the Department of Pre Clinical Sciences.</b>			

Programme Content				
Course duration	3 semesters			
Course Name	Anatomy			
Credit Value	12			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	92	150	31	327
	5 credits	5 credits	2 credits	
Course Aim				
<b>Intended Learning Outcomes</b> Semester 1 Course code: PRA1115	On completion of this diploma, the student will be able to, <b>L01</b> describe the basic anatomical concepts <b>L02</b> explain the organization of the human body <b>L03</b> explain the body systems <b>L04</b> describe the cell <b>L05</b> explain the tissue types <b>L06</b> explain basic embryology <b>L07</b> explain basic medical genetics			
	<b>Basic anatomical concepts</b> Introduction to anatomy Histology Basic Embryology Genetics			
	<b>Upper limb and thorax</b> Structure of the Upper Limb Structure of the Thorax			
Semester 2 Course code: PRA1214	<b>Cardiovascular and Respiratory system</b> Structure of the Cardiovascular System Structure of the Respiratory System			
	<b>Abdomen, pelvis and perineum</b> Structure of the Abdomen Structure of the Pelvis and Perinium			
	<b>Gastro intestinal system</b> Structure of the Gastrointestinal system			
	<b>Genito urinary system</b> Structure of the genito urinary system			
	<b>Lower Limb</b> Structure of the Lower limb			
Semester 3 Course code: PRA2113	<b>Head and neck</b> Structure of the Head and Neck			
	<b>Central nervous system</b> Structure of the Central Nervous System			
Teaching /Learning Methods:	Lectures, dissections, tutorials, small group discussions and practicals			
<b>Assessment Strategy:</b> An aggregate mark of 40% should be obtained.	<b>Assessment tools:</b> MCQ – 50 questions – 3 hours SEQ – 6 questions – 3 hours Spot – 50 questions Viva -10 minutes			
Recommended	<ul style="list-style-type: none"> <li>Cunningham's Manual of Anatomy (Vol - I) G. J. Romanes</li> </ul>			



reading	<ul style="list-style-type: none"><li>• Cunningham's Manual of Anatomy (Vol - II)G. J. Romanes</li><li>• Cunningham's Manual of Anatomy (Vol - III) G. J. Romanes</li><li>• Clinical Anatomy - Harold Ellis, VishyMahadevan</li><li>• Wheatear's Function Histology - Barbara Young , James S. Lowe , Alan Stevens , John W. Heath , Philip J. Deakin</li><li>• Human Embryology (2nd Edition) Prof. Malkanthi S. Chandrasekara</li><li>• Grants Atlas - Anne M.R. Agur, Arthur F. Dalley Clinical Neuroanatomy for Medical Students Richard S. Snell</li><li>• Basic Medical Genetics - Prof. Rohan W Jayasekara</li><li>• Langman's Medical Embryology- T. W. Sadler</li></ul>				
Linkage between Learning Outcomes (LOs) and Program outcomes (POs)					
		POs			
		P01	P02	P03	P04
LOs	L01	H	M	M	L
	L02	H	L	L	M
	L03	M	L	L	L
	L04	M	M	L	M
	L05	H	M	M	L
	L06	L	L	L	M
	L07	L	L	L	M
	H: high M: medium L : Low				

Programme Content				
<b>Course duration</b>	3 Semesters			
<b>Course Name</b>	Biochemistry			
<b>Credit Value</b>	8			
<b>Hourly Breakdown</b>	Theory	Practical	Other learning activities	Independent learning
	86	30	26	258
	6 credits	1 credit	1 credit	
<b>Course Aim</b>				
<b>Intended Learning Outcomes</b>	<p>On completion of this course, the student will be able to</p> <p><b>LO 1</b> describe the biomolecules found in the human body and their importance for health.</p> <p><b>LO 2</b> explain the metabolic pathways and their role in life, how errors in them lead to disease and biochemical principles behind common tests used in diagnostics.</p> <p><b>LO 3</b> explain the principles of human nutrition, nutritional requirements and common human nutritional deficiency diseases.</p>			
<b>Course Contents</b>  Semester 1 Course code: PRB1114	<b>Cell Biochemistry</b> Cell structure and functions pH & buffers Bioenergetics Hormone action			
	<b>Biomolecules</b> Carbohydrates Proteins Lipids Nucleic acids			
	<b>Functional Aspects of Proteins</b> Information transfer Hemoglobin Enzymes Digestion and absorption Plasma proteins			
Semester 2 Course code: PRB1212	<b>Metabolism I</b> Carbohydrate metabolism Lipid metabolism			
	<b>Metabolism II</b> Protein metabolism Nucleic acid metabolism			
Semester 3 Course code: PRB2112	<b>Nutrition</b> Vitamins Principles of nutrition			
	<b>Basic clinical biochemistry</b>			
<b>Teaching /Learning Methods</b>	Lectures, tutorials and practicals			
<b>Assessment Strategy:</b> An aggregate mark of 40% should be	<b>Assessment tools:</b> MCQ – 40 questions – 2 hours SEQ – 6 questions – 3 hours			

obtained.		OSPE – 20 questions Viva -10 minutes			
Recommended reading		Lippencotts' illustrated Biochemistry, Denise R. Ferrier			
Linkage between Learning Outcomes (LOs) and Program outcomes (POs)					
LOs		POs			
		P01	P02	P03	P04
	L01	H	M	M	M
	L02	H	H	H	H
	L03	H	H	H	H
	H: high      M: medium      L : Low				

Programme Content				
Course duration	3 Semesters			
Course Name	Physiology			
Credit Value	10			
Hourly Breakdown	Theory	Practical	Other learning activities	Independent learning
	104	54	30	312
	7 credits	2 credits	1 credit	
Course Aim				
Intended Learning Outcomes	<p>On completion of this course, the student will be able to</p> <p><b>LO 1</b> define basic principles in human physiology.</p> <p><b>LO 2</b> describe sequentially and logically, human physiological processes.</p> <p><b>LO 3</b> explain using clinical examples, listed disturbances in human physiology.</p>			
<b>Course Contents</b> Semester 1 Course code: PRP1114	<b>General Physiology</b> Body fluids Body fluid compartments and their homeostasis Tissue fluid formation and oedema Starling forces and their derangements Dehydration and IV Fluids Fluid balance and regulation of ECF volume Homeostasis Autonomic Nervous System			
	<b>Blood and Immunity</b> Haemopoiesis and Haemoglobin Haemostasis, Haemolysis and Jaundice Blood grouping, Blood transfusion, Rh incompatibility Anaemias			
	<b>Cardiovascular physiology</b> Introduction to CVS Cardiac Output and BP Heart sounds and Murmurs JVP Cardiovascular regulatory mechanisms Cardiovascular homeostasis in health and diseases Electrocardiogram (ECG)			
	<b>Respiratory physiology</b> Mechanics of Respiration Gas exchange Regulation of Respiratory system Respiratory adjustments in health and disease			
Semester 2 Course code: PRP1214	<b>Gastrointestinal physiology</b> Mouth and Oesophagus Stomach Small intestine Large intestine Liver and gall bladder			

	<b>Renal physiology</b> Functions of the kidneys Renal blood flow and renal clearance Renal regulation of electrolytes Counter current mechanism Water balance and diuretics Micturition Renal dysfunction
	<b>Endocrine physiology</b> Introduction to endocrine physiology Hypothalamus and pituitary axis Pituitary and Pituitary dysfunction Thyroid and thyroid dysfunction Adrenal cortex and dysfunction Adrenal medulla and dysfunction Endocrine pancreas Parathyroid gland and calcium metabolism
	<b>Reproductive physiology</b> Male reproductive system Female reproductive system Human sexual response Pregnancy and normal labor Lactation Menopause and Andropause Contraception
Semester 3 Course code: PRP2112	<b>Neurophysiology</b> Introduction to neurophysiology Sensory nervous system Motor nervous system Spinal cord lesions Cranial nerves Physiology of taste and smell Physiology of vision Physiology of hearing and balance Physiology of pain Reflexes – Monosynaptic and polysynaptic Posture, gait and ataxia Basal ganglia – Higher cerebral functions
<b>Teaching /Learning Methods</b>	Lectures, tutorials and practicals
<b>Assessment Strategy:</b> An aggregate mark of 40% should be obtained.	<b>Assessment tools:</b> MCQ(BRQ/MRQ) – 60 questions – 3 hours SEQ – 5 questions – 3 hours OSPE – 25 questions Viva -10 minutes
<b>Recommended reading</b>	<ul style="list-style-type: none"> <li>Ganong's Review of Medical Physiology ,Kim E. Barrett , Susan M. Barman , Scott Boitano , Heddwen Brooks</li> <li>Hutchinsons' Clinical Methods,Michael Glynn,William M Drake</li> </ul>

Linkage between Learning Outcomes (LOs) and Program outcomes (POs)					
		POs			
		P01	P02	P03	P04
LOs	L01	H	H	H	M
	L02	H	H	H	M
	L03	H	H	H	M
	H: high    M: medium    L : Low				