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2nd BDS Program

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INTRODUCTION

At the outset it is important to realize that only those students who pass a minimum of eight (08) Basic Sciences courses are permitted to enter the second year teaching programme.

The study program of the second year builds on the understanding of the 'normal' structure and function of the human body that you gained in the first year. Here you will proceed to learn about the agents and processes that are important in the causation of disease and illness.

The specific disciplines you learn during the third year are Microbiology, Pathology and Pharmacology, General Medicine and General Surgery. Through the study of these disciplines you will begin to appreciate the multi-factorial nature of the causation of illness, and encounter agents including microbiological, chemical, psychological, social and economic ones. You will also be introduced to groups of chemicals and other agents that are used in treatment of diseases and illnesses and the specific processes by which they work. Common general diseases and principles of their medical and surgical management are also to be learnt during this year. This will prove to be immensely useful to you, since people with problems related to teeth and other oral structures, who seek your help, will often have medical problems of a general nature as well. It is important to be able to provide dental treatment without making adverse impacts on their general health. The disciplines of General Medicine and General Surgery will provide you with the necessary basic competencies for this. They will also provide you with a wider perspective for your practice as a medical professional.

The teaching program will consist of lectures, tutorials, practical classes, demonstrations, clinical and ward classes. Attendance at all teaching learning sessions is encouraged and expected. Participating in at least 80% of clinical, ward and tutorial attendance is compulsory.

Student assessments are conducted separately in each of the disciplines of pathology, microbiology, pharmacology, medicine and surgery, at the end of the year. You will also be introduced to patients both at the Dental hospital and the General Hospital Peradeniya.

At the end of the second semester of the second year, the second BDS examination will be held. All students are expected to sit for this examination, however only those students who have attended a minimum of 80% of the total number of clinical, practical and tutorial classes will be eligible to do so.

You will be assessed in all five disciplines studied during the year. There will be five written examinations, of two hours each. In addition to these, Pathology and Pharmacology will have a viva voce component. Microbiology has a practical exam, Medicine has a clinical exam in the form of an OSCE, while General Surgery has a clinical and an OSCE.

In order to be eligible to proceed to the final phase of the program you must pass all the disciplines offered at the 2nd BDS Examination.

Time Table – 2ndBDS -2016

	Monday	Tuesday	Wednesday	Thursday	Friday
8.00-9.00 am		Microbiology tutorials/ English	Pharmacology Tutorials/ Surgery Ward Class/ ICU/ Theatre	Microbiology/ Pathology Practical	Pharmacology Tutorials/ Surgery Ward Class/ ICU/ Theatre
9.00-10.00 am	Pharmacology Lecture				
10.00-11.00 am	Pathology Lecture				
11.00-12.00 am	Pharmacology Lecture		Surgery Lecture		Surgery Lectures
12.00-1.00 pm	LUNCH INTERVAL				
1.00-2.00pm	Pathology Lecture	Medicine Tutorials/ English	Medicine Lecture	Medicine Lecture	Microbiology Lectures
2.00-3.00pm	Microbiology Lecture		Medicine Ward Class/ Clinical	Medicine Ward Class/ Clinical	Self-Learning
3.00-4.00pm					
4.00pm	Self-Learning		Pharmacology	Pharmacology	

Pathology

Aim:

In the discipline of pathology, you will study human diseases in the context of dentistry. You will learn how diseases are caused, their course of progress, the changes in structure and function that takes place during these processes, their significance and impact on the person. Understanding of the above core concepts of disease (i.e. understanding pathology) will help you to understand how the clinical features of different diseases occur & how their treatments work. This understanding will in turn, enable health care workers to handle & help their patients in a better & scientific way.

The specific areas studied include:

- Ø Cellular reactions to injury - hyperplasia, hypertrophy, atrophy, & Metaplasia & list, reversible & irreversible forms of cell injury, necrosis,
- Ø Inflammation - acute and chronic inflammations
- Ø Neoplasia - neoplastic and non-neoplastic lesions, benign and malignant tumours, mechanisms of metastasis, etiologic factors in carcinogenesis. diagnostic modalities for cancers
- Ø Haemodynamic disorders – maintenance of fluid balance, Starling forces, effects of disruption of
- Ø Forces, myocardial infarction, deep venous thrombosis, pulmonary thromboembolism, etc.... edema of congestive heart failure, nephrotic syndrome, cirrosis, and other clinical conditions, shock,
- Ø Genetic diseases – the basis, 4 major categories mendelian disorders chromosomal disorders, multifactorial disorders.

Teaching/ learning methods:

Lectures and laboratory practical classes,

Semester 1

Lecture topics

Introduction to General Pathology
Cellular reactions to injury (cellular adaptations, cell injury, necrosis)
Inflammation (acute and chronic)
Healing (wound and fracture)
Hemodynamic Disorders (Edema, Hyperemia & congestion, Hemorrhage, Hemostasis, Thrombosis, Embolism, Infarction
Shock, Disseminated Intravascular Coagulation)

Semester 2

Lecture topics

Genetic basis of disease (Mutation, Mendelian disorders, Chromosomal disorders, Multifactorial disorders, Single gene disorders)
Immunopathology
Neoplasia
Atherosclerosis
Intra and Extracellular accumulation and Pathological calcification
Pathology of infectious diseases
Basic Haematology

Practical /

Laboratory Classes (Microscopic slides)

Inflammation (Suppurative appendicitis, Bronchopneumonia, Breast abscess, Tuberculoid lymphadenitis, Millitary tuberculosis (lung), Tuberculoid leprosy
Cell Injury and Cellular adaptations (Fatty liver, Myocardial infarction, Masseteric hypertrophy, Chronic sialadenitis (acinar atrophy),

Metaplastic changes of salivary ducts and connective tissues,
Apoptosis
Fluid and Hemodynamic disorders (Pulmonary oedema,
Thrombosis,
Chronic venous congestion – liver and lung, Atheroma
Neoplasia and Dysplasia (Epithelial dysplasia,
Fibroadenoma breast, Pleomorphic adenoma,
Squamous cell carcinoma, Thyroid adenoma, Adenocarcinoma)
Intra and Extracellular accumulation and Pathological calcification
(Haemochromatosis of liver, Amyloidosis of spleen, Melanophages,
Dystrophic calcification)

Student assessment:

At the end of the year

Theory paper- 12 SAQs	90%
Viva Voce	10%
Total	100%

Recommended reading-

1. Pathologic Basis of Disease, by Robbins & Cotran,
(7th Edition)

Microbiology

Aim:

The discipline aims to provide knowledge and understanding of microorganisms and their effects relevant to the practice of Dentistry. This includes:

- Ø Systematic microbiology - Nomenclature, structure, physiology, genetics, mechanisms of pathogenesis, and clinical manifestations associated with the major pathogenic microorganisms (bacteria, fungi, and virus).
- Ø Infection and Immunology - Microbiological basis of infectious diseases and associated host responses. Basic concepts in immunology, Antigen presentation and recognition, MHC antigens, Graft vs. host disease, Grafts rejection, Hypersensitivity and autoimmune diseases.
- Ø Clinical microbiology – Infections relevant to dental practice, bacteremia, septicemia, infective endocarditis, hospital acquired infections, compromised host, infection control in dentistry.
- Ø Oral microbiology: Ecology of the oral cavity, Bio-films associated diseases, microbiology of dental caries and periodontal disease, dento-alveolar and oral mucosal infections.

Teaching/ learning methods:

Lectures, Practical And Demonstration Classes and Tutorials

Semester 1

Lecture topics -

Introduction to Microbiology, Bacterial Metabolism, growth & genetics, Host microbial interactions and normal microbial flora, Sterilization & disinfection, Principles of infections and microbial pathogenesis, Gram positive bacteria, Gram negative bacteria, Anaerobes, Collection, transportation and process of microbiological samples,

Acid fast bacilli/ Mycobacteriaceae, Innate and acquired immunity, Compliment system, Humoral and cell mediated immune response, Abnormal immune responses, Tumor immunity Graft vs host reactions and transplant immunology, Tolerance and autoimmunity, Cytokines.

Practicals (11 Classes)

Visit to microbiology Laboratory, Microscopy, Gram Staining – technique, Gram Staining - demonstration, Gram +ve cocci,

Gram +ve bacilli, Gram –ve cocci, Gram –ve bacilli, Endospore Demonstration, Acid Fast Staining Demonstration, Acid fast bacilli

Tutorial Topics (12 classes):

Why do dental students need to know microbiology?,
Microscopy,
Principles of infection,
Sterilization and disinfection,
Microbial virulence,

Host-microbial interactions,
Gram positive bacteria,
Gram negative bacteria,
Innate immunity,
Immune recognition,
Immune response

Semester 2

Lecture topics -

Introduction to virology,
Herpes viruses,
Hepatitis viruses,
HIV infection and AIDS,
Fungi of dental relevance,
Ecology of the oral cavity,
Organization of biofilms,
Microbiology of dental caries,
Microbiology of periodontal diseases,
Oral candidiasis,
Skin and Soft-tissue infection,
Systemic infections related to oral cavity,

Respiratory tract Infections,
Infections in the compromised patient,
Hospital acquired infections,
Antibiotics and prevention of resistance formation,
Infection control in Dentistry,
Systemic infections related to oral cavity (Bacteremia, septicemia, endocarditis).

Practical (12 Classes):

Virology ₂	Dental caries ₂ Periodontal
Herpes and HIV ₂	infections ₂ Oral
Fungi of Dental	Candidiasis Clinical
relevance ₂	cases
Oral Ecology ₂	
Immunology ₂	

Tutorials: (13 classes)

Mycobacteria,	Oral candidiasis,
General virology,	Oral health and systemic
Herpes viruses,	infections,
HIV infection,	Antimicrobial resistance,
Ecology of the oral cavity,	Infection control in
Biofilms,	dentistry,
Dental caries,	Compromised host and
Periodontal infections,	hospital acquired
	infections

Student assessment

Evaluation is conducted at the Second BDS Examination and consists of the following components.

Theory	60
Practicals	40 %
Total	100 %

Recommended reading

1. A.K. Abbas, A.H. Lichtman. 2011. Basic Immunology 3rded.
2. L. Samaranayake. 2012. Essential microbiology for dentistry. 4th ed.
3. Marsh & Martin. 2009. Oral microbiology. 5thed.

Pharmacology

Aim:

This discipline is planned to provide the fundamentals of pharmacology and an understanding of therapeutics with special emphasis on clinical dentistry. The main topics included are:

- Ø Basic principles of pharmacology,
- Ø Principles of antimicrobial therapy: antibacterials, antivirals, antifungals, antibiotic resistance, treatment failure in antimicrobial therapy, pharmacological agents, their modes of action and dosage regimens in relation to microbial infections,
- Ø Pharmacological management of oral and systemic infections, with reference to dental patients,
- Ø Phamaco-therapeutics in immune disorders,
- Ø Systemic pharmacology: Drugs acting on cardiovascular system, gastrointestinal system, respiratory system, renal system, endocrine system, hematological system, nervous system genitor-urinary system and oral adverse effects of medication.

Teaching/ learning methods:

Lectures, Tutorial Classes, Clinical Case Discussions

Semester 1

Lecture topics

Introduction to
Pharmacology

Drug nomenclature,
Permeation,

Routes of drug
administration,

Absorption,

Distribution,

Metabolism and excretion,

Drug Receptors,

Receptor interactions

Dose response curves,

Agonists and antagonists,

Partial agonists and inverse
agonists,

Clinical pharmacokinetics – bioavailability
and volume of distribution, clearance and
half life,

Systemic and clinical Pharmacology,

Drugs acting on ANS-

Sympathetic and
parasympathetic NS,

Drugs acting on CNS-
antipsychotics, anti epileptics,
GA & pre anesthetic
medication,

Autocoids, Steroids,

Drugs acting on RS,

Drugs acting on GIT,

Drug acting on CVS.

Tutorial topics

Problem based tutorials will be conducted according to the lectures conducted in that particular week.

Semester 2

Lecture topics

Drugs acting on GUT,
Hormones-DM,
Hormones-Thyroid axis,
Chemical
modulators/antineoplastic,
Drugs acting on
musculoskeletal
system/rheumatology,
Fluids & electrolyte,
Rational prescription,
Prescription in extremes of
age,
Therapeutics,
Nutrition
Drugs affecting calcium and
bone
Principal of antimicrobial
therapy,

Cell wall inhibitors-
penicillins,
cephalosporins,
carbapenems,
Protein synthesis inhibitors-
tetracyclines,
aminoglycosides, macrolids,
Sulphonamides and
Quinolones,
Introduction to Pain &
analgesics,
NSAIDs and Opioids,
Introduction to Local
anesthetics
Local anesthesia
Pharmacological
management of medical
emergencies in dental
practice

Tutorial topics

Problem based tutorials will be conducted according to the lectures conducted in that particular week.

Clinical cases will be discussed in last eight tutorial sessions.

Student assessments

Written paper	90%
Viva	10%
Total	100%

Recommended reading

1. Pharmacology by G Brenners and C Stevens. 2010. 3rd Edition..
2. Lippincott's illustrated Reviews Pharmacology by RA Harvey et al. 2009. 4th Edition.
3. Basic and Clinical Pharmacology by Bertram Katzung, Susan Masters and Anthony Trevor 12th Edition.
4. Adverse Drug Interactions in Clinical Dentistry by NS Soysa. 2014. 1st Edition.
5. Pharmacology by Rang and Dale.

General Medicine

Aim:

The course in medicine attempts to impart knowledge and understanding of the basic principles of general medicine with emphasis given on conditions with manifestations in the oro-facial region. Areas studied include: Introduction to clinical medicine, Initial management of common medical emergencies, Clinical pharmacology, and physical and psychological development of child patients.

Intended learning outcomes

On completion of the courses in medicine during the third year you are expected to:

- Ø Be able to Conduct history taking and basic examination of the Cardiovascular System, Respiratory System, Abdomen, Nervous system,
- Ø Be able to Determine the need for and basic interpretation of common investigations (Radiology, Hematology, Urine, Liver Function Tests, Renal function tests, ECG),
- Ø Be conversant with the Diagnosis and management strategies of common/ potentially serious medical conditions, including Infections including AIDS, Malignancies, Malnutrition, Gastrointestinal diseases, Endocrine diseases, Nutritional disorders, Psychological disorders.
- Ø Recognize major general medical problems and referral for advice and management,
- Ø Management of patients inflicted with common general medical conditions during dental procedures,
- Ø Carry out recognition and Initial management of common medical emergencies, including CPR.

Teaching / learning methods:

lectures, tutorials, ward classes

Semester 1

Lectures topics

- Cardiovascular disorders -cyanotic congenital heart diseases, Ischaemic heart disease, valvular heart disease, arrhythmias, hypertension,
- Hematological disorders- anaemia, leukaemia, multiple myeloma, leucopenia, thrombocytoepnia,
- Respiratory disorders – respiratory infections, pneumonia, bronchial asthma, chronic obstructive airway diseases (COPD), tuberculosis, lung tumours
- Neurological disorders- syncope, epilepsy motor neurons disease, headache, acute confusional states, coma, hemiplegia, paralysis of limbs, Facial pain (including neuralgias)
- Endocrine disorders -diabetes thyrotoxicosis, hyper/hypo pituitarism, hyper/hypo parathyroidism, addison's disease
- GIT disorders- dyspepsia, dysphagia gastro-oesophageal reflux disease (GERD), gastro-enteritis, mal-absorption syndromes, inflammatory bowel disorders, irritable bowel syndrome (IBS)
- Hepatology- viral Hepatitis,, chronic hepatitis, cirrhosis
- Nephrology- nephritis, nephrotic syndrome, acute renal failure, chronic renal failure

Semester 2

Lectures topics

- Musculoskeletal disorders - rheumatoid arthritis, sero-negative arthritis, cervical spondylosis, lower back pain, fibro-myalgia
- Autoimmune disorders- myasthenia gravis, systemic lupus erythematosus, sjogren's syndrome
- Dermatological and other conditions -lichen planus, pemphigus, pemphigoid, erythema multiforme, behcet's syndrome, reiter's syndrome
- Miscellaneous -First aid and CPR, Poisoning, Stings and bites
- Infections -HIV, STD
- Common viral and bacterial infections
- Anxiety and phobias , Depression and psychosis
- Chest radiograph, CT and MRI of head and neck
- Introduction to nuclear medicine

Tutorial topics for semester I and II

Problem based tutorials will be conducted according to the lectures conducted in that particular week.

Ward Classes

Ward classes will be carried out at the Teaching Hospital, Peradeniya on Wednesday and Thursday afternoons.

Student assessments

Written paper	90%
OSCE	10%
Total	100%

Recommended reading

1. Kumar and Clark's Clinical Medicine by PKumar and MClark. 5th edition
2. Davidson's Principles and Practice of Medicine by BRWalker, NRColledge, SH Ralston and IPenman
3. Oxford handbook of Clinical Medicine by MLongmore, IWilkinson, ABaldwin and EWallin.

General Surgery

Aim:

Surgery or General Surgery as opposed to Oral Surgery is taught to dental students as it is important for them to have knowledge and understanding of the basic principles of surgery.

Intended learning outcomes:

On completion of the courses in general surgery during the third year you are expected to be able to:

- ∅ Carry out Immediate management / 1st line life support for a collapsed patient in an emergency condition, patients in surgical and other emergency situations and to carry out cardio-respiratory resuscitative measures.
- ∅ Identify and initiate management of surgical emergencies and concomitant surgical problems according to Basics of Trauma, Triage, Advanced trauma life support (ATLS), Resuscitation.
- ∅ Apply basic concepts in the diagnosis and management of Common surgical conditions including Surgical infections
- ∅ Carry out comprehensive pre-operative and post-operative care of patients undergoing surgery,
- ∅ Provide/ assist in pre-operative and post-operative care of patients undergoing surgery.
- ∅ Be familiar with the functions and services of other Units such as Radiology, Pathology, Microbiology, Blood bank and Intensive Care facilities of Hospitals in Sri Lanka
- ∅ Maintain asepsis while engaging /assisting in clinical procedures managing common infectious conditions, according to good surgical practice
- ∅ Apply the basic principles and fundamentals of general and regional anaesthesia, pain medicine, critical care and resuscitation Anesthesiology appropriately

Teaching / learning methods:

Lectures, Ward Classes, Sessions at ICU, Theatre

Semester 1

Lecture topics

Surgery

Introduction to surgery

History taking, examination and investigations

Trauma

Head injury, spinal injury, abdominal and injury to thorax

Management of bleeding

Fluids and electrolyte balance

Anaesthesiology

Introduction to the appointment

Pain –introduction

Pain Medicine,

Analgesics

Resuscitation and Critical care

Intravenous fluids

SIRS, Sepsis and Multi organ Failure

Basic Life Support

Blood products

Discussions:

Discussions will be carried out during ward classes, ICU and theatre sessions.

Semester 2**Lecture topics****Surgery**

Preoperative assessment and Preparation
Post operative care
Nutrition in the surgical patient
Medical emergencies Surgical infections
Sterilization/disinfection/anti sepsis/asepsis
Sutures

Wound closure techniques/reconstruction ladder

Anesthesiology

Advanced Life Support
Shock
Care of unconscious patient
Acute Respiratory Failure and ventilatory support
Airway obstruction

Discussions:

Discussions will be carried out during ward classes, ICU and theatre sessions.

Student assessment

Written paper	50%
Spots/OSPE	40%
VIVA	10%
Total	100%

Recommended reading

1. General Surgery Lecture Notes by H Ellis, R Calne and C Watson.
2. Bailey and Love's Short Practice of Surgery by NS Williams.
3. Principles and Practice of Surgery by OJ Garden.
4. Oxford Handbook of Clinical Surgery by G McLatchie, NB orley and J Chikwe.

Academic Staff Members

Pathology

Prof.B.S.M.S.Siriwardana
Prof. W.M. Tilakaratne
Prof. (Ms) P.R. Jayasooriya
Prof. E.A.P.D. Amaratunga

Microbiology

Prof. P.S Rajapakse
Prof. G.J Panagoda
Dr. J.A.M.S Jayatilake

Pharmacology

Dr. H.M.T.D.K Herath
Dr.(Ms) N.S Soysa

General Medicine (Conducted by staff of Faculty of Medicine)

Prof. S.A.M. Kularatne
Prof. ChandrikaJayasinghe
Prof. I.B. Gawarammana
Prof. W.A.T.A. Jayalath
Dr. ArjunaMedagama
Dr. D.M.P.U.K.Ralapanawa
Dr. ManojiPathirage

General Surgery Anesthesiology

Dr. P.S.K. Nanayakkara
Dr. H.S. Ranasinghe

Surgery (Conducted by staff of Faculty of Medicine)

Dr. A.U.B. Pethiyagada
Dr. K.B. Galketiya
Dr. H.M.S.R.B. Kotakadeniya
Dr. ArindaDharmapala
Dr. A.K.B.B.T.B.Samarasinghe
Dr. S.P.M. Peiris