# BACHELOR OF DENTAL SURGERY PROGRAMME





Faculty of Dental Sciences University of Peradeniya



# Bachelor of Dental Surgery Programme Semester 4

Faculty of Dental Sciences University of Peradeniya

2025

## CONTENTS

		F	Page
Intro	duction		4
4 <sup>th</sup> Se	emester Cou	irses	6
1	DS2201	Human Diseases 1	7
2	DS2202	Human diseases 2	10
3	DS2203	Introduction to Clinical Dentistry, Ethics & Professionalism	13

#### **INTRODUCTION**

The Bachelor of Dental Surgery (B.D.S) is a five-year study programme, followed by a year of compulsory internship that will qualify you to practice dentistry in Sri Lanka. The training is geared towards transforming you to a dental surgeon who is fully competent to engage in evidence-based dental practice with an emphasis on prevention and early detection of dental diseases. The teaching activities comprise lectures, discussions, tutorial classes, in class assignments, laboratory work, clinical work as relevant to the discipline.

The study program is conducted entirely in English. While the intensive program is mostly intended to ensure that you reach a minimum level of competency required to follow classes in English medium, further training in English will continue throughout the first two semesters to help you improve your English language proficiency.

The first two semesters of the academic program consist of 13 courses. These courses impart knowledge and skills in biomedical sciences as a foundation for the study of clinical dentistry. In the first semester, there is a non-GPA course that will introduce you to the dental profession and common oral diseases and conditions.

The third semester consists of five courses namely Oral Biology, Tooth Morphology and Occlusion, Human Diseases 1, Human Diseases 2 and Dental Biomaterials. The two courses on Human Diseases cover fundamental mechanisms and general principles of diseases in the human body.

Fourth semester consists of two courses namely Human Diseases 3 and 4 which will enable you to study common human diseases further, especially those that have a bearing on dental diseases and their treatment. In addition, a basic introduction to clinical skills, ethics, communication skills and professionalism is given in the fourth semester.

These four semesters are designed to help you acquire the knowledge and skills necessary to undergo the next phase of the study program comprising supervised hands on clinical training.

## 4<sup>th</sup> SEMESTER COURSES

### Course No: DS 2201 Course title: Human Diseases 1 Credit value: 5

Pre-requisites: Should have followed all courses of semesters 1, 2 and 3

**Aim:** The course aims to teach students on oral ecology, oral biofilm, oral infections and infection control in clinical dentistry and impart knowledge and skills required to manage medically compromised patients with neurological, cardiovascular, respiratory, dermatological, psychiatric and hematological diseases/ conditions.

#### Intended learning outcomes

On successful completion of the course the students should be able to:

- explain how the oral ecology involves in causation of dental caries, periodontal diseases and other oral infections
- explain the organization of oral biofilm and its implications in the pathogenesis and management of infections,
- describe the pathophysiology and clinical features of child growth and developmental problems and neurological, psychiatric, cardiovascular, respiratory, dermatological, autoimmune and hematological diseases/ conditions with regard to practice of clinical dentistry,
- describe the precautions necessary when treating patients with neurological, psychiatric, cardiovascular, respiratory, dermatological, autoimmune and hematological diseases/ conditions, during clinical dental practice,
- Outline the management of complications that may arise when treating patients with neurological, psychiatric, cardiovascular, respiratory, dermatological, autoimmune and hematological diseases/ conditions, during clinical dental practice,
- evaluate the risk of infection transmission in clinical dental practice, ward and ICU settings and take adequate measures to prevent cross infection and antimicrobial resistance..

Time Allocation (Hours):	Lectures: 53	In –class assignments	:16	Practical: 08
	Clinical Work: 30	Self-Learning Hours:	143	
Course content:				
Lectures:			Discipline	Hours
1. Ecology of the o	ral cavity		Micro	1
2. Organization of	Organization of biofilms		Micro	1
3. Microbiology of	3. Microbiology of dental caries			2
4. Microbiology of periodontal disease and other oral infections			Micro	2
5. Problems associ	Problems associated with child growth and development Medi			3
6. Cranial nerve di	5. Cranial nerve disorders and neuralgias Medi			1
7. Headache and n	7. Headache and migraine			1

8. CVD and Meningitis	Medi	1
9. Epilepsy	Medi	1
10. Common psychological disorders related to dental patients	Medi	2
(anxiety, phobias, psychosis & depression)		
11.Drugs acting on CNS	Pharm	1
12.Pathology of ischemia and infarction	Path	2
13.Pathology of edema	Path	1
14. Pathology of thrombosis and embolism	Path	1
15. Pathology of atherosclerosis	Path	1
16. Ischemic heart diseases	Medi	1
17. Anticoagulants, anti-thrombotics and drugs for angina and MI	Pharm	2
18. Valvular heart disease and endocarditis	Medi	1
19.Rheumatic Fever	Medi	1
20. Hypertension	Medi	1
21. Cardiac failure and ECG interpretation	Medi	1
22. Drugs used for cardiovascular disorders	Pharm	2
23.Anti-atherosclerotic drugs	Pharm	1
24. Pathology of hematological disorders	Path	2
25.Anemia and leukemia	Medi	1
26.Bleeding disorders	Medi	1
27. Drugs acting on hematological system	Pharm	1
28.Bronchial asthma	Medi	1
29.COPD	Medi	1
30.Autoimmune disorders	Medi	1
31.Drugs acting on respiratory tract	Pharm	2
32.Dermatological conditions/disorders related to dentistry	Medi	2
33.Oral manifestations of HIV and STD	Omed	2
34.Bacteremia, sepsis and endocarditis	Micro	1
35. Diagnosis and management of sepsis and shock	Surgery	1
36.Skin and soft tissue infections	Micro	1
37.Dental implications of respiratory infections	Micro	1
38.Antimicrobial resistance	Micro	2
39. Hospital acquired infections	Micro	1
40.Infection control in ward and ICU settings	Micro	1

	Total	53
In class	S Assignment:	
1.	Oral Micro tutorial (Oral ecology and biofilms)	2
2.	Drugs acting on CVS (hypertension / heart failure / dysrhythmia)	2
3.	General Pathology tutorial (infarction / edema / embolism)	2
4.	Clinical pharmacology - I	2
5.	Clinical Microbiology tutorial	2
6.	Clinical pharmacology - II	2
7.	Clinical Microbiology tutorial	2
8.	Infection control in Dentistry	2
	Total	16
Practic	als	
1.	Oral Microbiology practical (Oral ecology and biofilms)	2
2.	Oral Micro practical (Dental caries and periodontal diseases)	2
3.	General Pathology practical (infarction, edema and embolism)	2
4.	Clinical Microbiology practical	2
	Total	8
Clinica	ls	
1.	Ward classes	15
2.	Ward classes	15
	Total	30

#### **Recommended reading**

- KC Carrol, J Butel and S Morse. 2016. Jawetz, Melnick and Adelberg's Medical Microbiology.27<sup>th</sup> ed. or later
- 2. P. Marsh, M. Lewis, H. Rogers, D. Williams, M. Wilson Oral Microbiology, 6th Edition
- 3. RJ. Lamont (Ed), GN. Hajishengallis (Ed), H Koo (Ed), HF. Jenkinson (Ed) Oral Microbiology and Immunology, 3rd Edition
- 4. LP Samaranayake.2012. Essential Microbiology for Dentistry.4<sup>th</sup> ed. or later
- 5. GM Brenner and C Stevens. 2012. Phamacology.4<sup>th</sup> ed. or later
- 6. RA Harvey et al. 2014. Phamacology (Lippincott's illustrated Reviews Series).6<sup>th</sup> ed. or later
- 7. P Kumar and ML Clark. 2016. Kumar and Clark's Clinical Medicine. 9<sup>th</sup> ed. or later
- 8. Robbins & Cotran. Pathologic basis of disease, Kumar Abbas & Aster; 9<sup>th</sup>ed. or later
- BR Walker et al. 2014. Davidson's Principles & Practice of Medicine. 22<sup>nd</sup>ed. or later
- 10. M Longmore et al. 2014. Oxford handbook of Clinical Medicine. 9th ed. or later
- 11. NS Williams.2008. Bailey and Love's Short Practice of Surgery. 26th ed. or later
- 12. G McLatchie et al. 2013. Oxford Handbook of Clinical Surgery. 4th ed. or later

Assessment		Percentage marks
In-course		20% - 2EMQ + 5 MCQs (SBA)
End-semester	Theory	60% - 6 SAQs
	Practical	20% - 5 OSPEs/OSCEs

### Course No: DS2202 Course title: Human Diseases 2 Credits: 5

#### Pre-requisites: Should have followed all courses of semesters 1, 2 and 3

**Aims:** The course aims to teach students of the clinical features, complications, and management of gastro intestinal and liver diseases, arthritic conditions, endocrine disorders, neoplasia and trauma and impart knowledge and skills required in the management of medical emergencies that may arise in dental practice.

#### Intended learning outcomes:

On successful completion of the course the students should be able to:

- > explain the process of healing, diagnosis, management and the complications of fractures
- describe the diagnosis and management of head, chest and spinal injuries, acute wounds and burns
- > explain pre and post-operative management of a patient before and after surgery
- describe the clinical features, complications, emergencies and management of patients with endocrine disorders including diabetes, thyroid and parathyroid disorders and adrenal disorders and their implications in dental practice
- describe the clinical features, complications, emergencies and management of common gastrointestinal and hepatic diseases, musculoskeletal and renal disorders and their implications in dental practice
- describe the pathological process of calcification, pigmentation and amyloidosis and associated complications and drugs used to treat metabolic disorders of calcium and bone mineralization,
- explain the pathogenesis, clinical features, complications, management, and prevention of neoplasia.
- provide first aid and basic life support to patients in medical emergencies and to monitor patients undergoing advanced life support.

	patients undergoing advanced ine support.				
Time Allocation (Hours):		Lectures: 58	In-class assignments: 10		Practicals: 04
		Clinical work: 30	Self-Learning: 148		
Course	content:				
Lecture	es:			Discipline	Hours
1.	Diagnosis and manage	ement of fractures		Surgery	2
2.	Biology of fracture he	aling		Path	2
3.	Osteomyelitis and ost	eoradionecrosis		Surgery	2
4.	4. Head, chest and spinal injuries		Surgery	2	
5.	Chest radiographs/CT	/MRI of head and neck	(	OMed	2
6.	6. Management of acute wounds 5			Surgery	2
7.	Management of burn	S		Surgery	2
8.	Fluid and electrolyte	palance		Surgery	1
9.	Pre and post op mana	gement of a patient u	ndergoing surgery	Surgery	2

10. Nutrition management of a patient after surgery	Surgery	1
11. Common endocrine disorders with reference to clinical	Med	4
dentistry (DM, thyroid, parathyroid, adrenal)		
12. Drugs acting on endocrine system	Pharm	2
13. Surgical aspects of common thyroid gland disorders	Surgery	1
14. GIT disorders (oral and peptic ulcers, diarrhea, constipation,	Med	2
malabsorption)		
15. Chronic liver diseases	Med	1
16. Dysphagia and dyspepsia	Surgery	1
17. Drugs acting on GIT	Pharm	1
18. Renal disorders	Med	2
19. Drugs acting on renal system	Pharm	1
20. Musculoskeletal disorders	Med	2
21. Drugs for arthritic disorders	Pharm	1
22. Calcification	Path	1
23. Obstructive disease due to calculi: salivary, biliary and urinary	Surgery	1
calculi		
24. Drugs affecting calcium and bone	Pharm	1
25. Dysplasia and other conditions	Path	1
26. Neoplasia	Path	4
27. Classification of tumours and tumour biology	Surgery	2
28. Diagnosis and staging of tumors	Surgery	1
29. Surgical management of tumors	Surg	2
	ery	
30. Non surgical management of tumors	Surgery	1
31. Anti-neoplastic drugs	Pharm	1
32. General principles of repair and reconstruction surgery	Surgery	1
33. Pigmentation	Path	1
34. Amyloidosis	Path	1
35. First aid	Surgery	2
36. Basic and Advanced Life Support	Surgery	2
37. Common medical emergencies in the dental clinic	Surgery	2
		58
In-class assignments		
1. Clinical pharmacology	Pharm	4
2. Fracture healing and miscellaneous pathological conditions	Path	2
3. Neoplasia	Path	2
4. Clinical microbiology	Micro	2
		10

Practicals		
1. Fracture healing and miscellaneous pathological conditions	Path	2
2. Neoplasia	Path	2
		04
Clinicals		
1. Ward classes (General medicine)	Med	15
2. Ward classes (General surgery)	Surgery	15
		30

#### **Recommended References/ Prescribed Textbooks**

- KC Carrol, J Butel and S Morse. 2016. Jawetz, Melnick and Adelberg's Medical Microbiology.27<sup>th</sup> ed. or later
- 14. LP Samaranayake.2012. Essential Microbiology for Dentistry.4<sup>th</sup> ed. or later
- 15. GM Brenner and C Stevens. 2012. Phamacology.4th ed. or later
- 16. RA Harvey et al. 2014. Phamacology (Lippincott's illustrated Reviews Series).6<sup>th</sup> ed. or later
- 17. P Kumar and ML Clark. 2016. Kumar and Clark's Clinical Medicine. 9th ed. or later
- 18. Kumar and Cotrans Pathological basis of disease
- 19. BR Walker et al. 2014. Davidson's Principles & Practice of Medicine. 22<sup>nd</sup>ed. or later
- 20. M Longmore et al. 2014. Oxford handbook of Clinical Medicine. 9<sup>th</sup> ed. or later
- 21. NS Williams.2008. Bailey and Love's Short Practice of Surgery. 26th ed. or later
- 22. G McLatchie et al. 2013. Oxford Handbook of Clinical Surgery. 4th ed. or later

Assessment		Percentage marks
In-course	20%	10% Portfolio –(two clinical cases of surgery/ medicine patients seen at the ward)10% Case presentation of a patient seen at the ward
End-semester	Theory	60% - 6 SAQs
	Practical	20% - 5 OSPEs/OSCEs

#### Course No: DS 2203

# Course title: Introduction to Clinical Dentistry, Ethics & Professionalism Credits: 5

#### Pre-requisites: Should have followed all courses of semesters 1, 2 and 3

Aims: The course aims to impart basic knowledge and skills in identifying/using basic dental

instruments, equipment and materials enabling students to understand/carry out basic operative

dental procedures in a laboratory/clinical setting. The course also aims to develop communication

skills and promote professional and ethical conduct among graduates.

#### Intended learning outcomes:

On successful completion of the course the students should be able to:

- > operate a dental unit effectively and carry out basic maintenance of it,
- identify dental hand instruments and rotary instruments accurately and use dental hand instruments effectively,
- > sterilize dental instruments by using appropriate methods,
- effectively excavate and prepare carious teeth for restorations by applying correct principles and techniques of tooth preparation in a laboratory setting,
- > perform specified dental laboratory/clinical procedures in a laboratory setting,
- manipulate common dental materials accurately, in relation to their clinical applications, scientific principles of structure and properties in a clinical setting,
- > explain the basic principles of radiography,
- communicate effectively with patients / the health-care team, and maintain the highest professional and ethical standards,
- explain the key ethical and legal norms and need for ethical behavior in the practice of dentistry.

Time Allocation (Hours):		Lectures: 25	Practicals: 90	Clinical work: 15	
	Self-learning: 120				
Course	content:				
Lectures: Hours					
1.	The Dental Unit, operati	on and maintenance		1	
2.	Introduction to basic and operative dental instruments 1			1	
3.	Role of laboratory techniques in replacement of missing teeth1			1	
4.	Introduction to caries 1			1	
5.	5. Natural history of dental caries 1			1	
6.	Principles of caries excavation and cavity preparation 1			1	
7.	Principles of cavity preparation on occlusal surfaces 1			1	
8.	Introduction to periodontal diseases 1			1	
9.	Natural history of periodontal diseases 1			1	
10.	Basic periodontal instruments and instrumentation 1				

11	Basic periodontal assessments and plaque control methods	1
11.	Sterilization and disinfection of dental instruments	1
13.	Cross infection control, universal precautions and reporting of accidents	
14.	Introduction to Radiography	
15.	Radiation physics	1
16.	Dental radiographic techniques for periapical radiographs	1
17.	Dental radiographic techniques for other intra-oral radiographs	1
18.	Principles of cavity preparation on proximal surfaces	1
19.	Principles of impression taking	1
20.	Effective communication with a patient and obtaining consent	1
21.	Delivering instructions and breaking bad news	1
22.	Ethics and ethical duties of a clinician	1
23.	Negligence, malpractice and the role of the Medical Council	1
24.	Role of the dental surgeon in judicial medical aspects	1
25.	Dental records and record keeping	1
	Total	25
Practic	als	
1.	Maintenance and operation of dental units	2
2.	Identifying and using common dental instruments	2
3.	Introduction to skills lab equipment	2
4.	Access and caries excavation	10
5.	Cavity preparation for occlusal restorations	12
6.	Cavity preparation for proximal restorations	12
7.	Periodontal instruments and instrumentation	12
8.	Intra oral radiography and techniques	5
9.	Sterilization and cross infection control	3
10.	Dental Laboratory Technology (DLT)	30
	Total	90
Clinica	ls	
1.	History taking	3
2.	Examination of a dental patient	4
3.	Dental Charting	2
4.	Periodontal Charting	4
5.	Communication	2
	Total	15
L		1

#### **Recommended References/ Prescribed Textbooks**

- 1. TM Roberson, et al. 2012. Sturdevant's Art and Science of Operative Dentistry. 6<sup>th</sup> ed. or later
- 2. N Garg and A Garg. 2012. Textbook of Operative Dentistry. 2<sup>nd</sup> ed. or later
- 3. A Banerjee and TF Watson. 2011. Pickard's Manual of Operative Dentistry. 9<sup>th</sup> ed. or later
- 4. E Kidd. 2005. Essentials of Dental Caries: The Disease and Its Clinical Management. 3<sup>rd</sup> ed. or later
- 5. R Linda and B Boyd. 2012. Dental instruments: a pocket guide. 4<sup>th</sup> ed. or later
- 6. JF McCabe and A Walls. 2008. Applied Dental Materials. 9th ed. or later
- 7. E Combe et al. 1992. Dental Biomaterials. 1<sup>st</sup> ed. or later
- 8. AM Pattison and GL Pattison. 1991. Periodontal Instrumentation. 2<sup>nd</sup> ed. or later

Assessment		Percentage Marks
In-course		20% - Proximal cavity preparation of a posterior tooth for amalgam mounted on a mannequin at the skills lab
End-semester	Theory	30% - 10 MCQs & 3 SAQs
	Practical	50% - 15 OSCE/OSPE

Prerequisite for ICA

Achieve grade B or above for a minimum of five caries removal and cavity preparations of occlusal cavities for amalgam (teeth will be collected)

#### Prerequisite for ESA

Successfully complete the ICA, Complete the attendance for all demonstrations given on periodontal debridement (with the supervisor's signature)