Frontier Dental College

ABBOTTABAD

Study Guide

(Adapted from Bahria University Guide)

1st Year BDS

FDC STUDY GUIDE

The study guide serves as a useful handy resource, helping you to navigate your journey at FDC.

The study guide is more than an academic guide.

It not only highlights what, as a student, you should aim to achieve as you work through the curriculum, but also provides essential information about various administrative protocols that you as students of Frontier Dental College are expected to follow.

Vision Statement of FMDC

To become an internationally recognized medical institution that contributes towards development of community health through excellence in medical education.

Mission Statement of FDC

To develop high skilled and motivated dental professionals with the application of basic knowledge equipped with ethical values and ability to provide national and international evidence based dental practice.

FRONTIER DENTAL COLLEGE ABBOTTABAD

PROGRAM LEARNING OUTCOMES (PLO's)

Sr.No	DENTAL PROGRAM LEARNING OUTCOMES	EDUCATIONAL DOMAIN
	At the end of Dental Program the graduates will be able to:	
1.	**Recognize and Apply Basic Scientific Principles** Demonstrate understanding and application of fundamental scientific principles necessary for providing high-standard oral health care.	**Cognitive (Knowledge)**
2.	**Identify and Uphold Patient Rights:** Identify and uphold the rights of dental patients, ensuring respectful and ethical treatment.	**Cognitive (Knowledge)**
3.	**Adhere to Ethical Standards** Identify and adhere to ethical rules and patients' rights within the dental profession, promoting integrity and professionalism.	**Cognitive (Knowledge)**
4.	**Diagnose and Treat Common Oral/Dental Diseases:** Discuss and implement strategies for diagnosis and treating common oral and dental diseases prevalent in the community.	**Cognitive (Knowledge)**
5.	**Interpret Medical/Dental Histories and Make Referrals:** Interpret efficiently medical and dental histories/reports, making appropriate referrals when necessary.	**Cognitive (Knowledge)**
6.	**Practice Evidence-Based Dentistry:** Demonstrate the application of evidence-based practices in dental clinics to ensure high-quality oral health care.	**Psychomotor (Skill)**
7.	**Engage in Lifelong Learning:** Exhibit lifelong learning abilities, including critical thinking, creativity, and staying updated with new information and developments in dental care.	**Psychomotor (Skill)**
8.	**Perform Dentistry Skills with Professionalism:** Perform dental procedure efficiently while demonstrating good professional attitude and communication skills.	**Affective (Attitude)**
9.	**Participate in Dental Research:** Display a proactive interest in dental research activities to contribute to the advancement of the field.	**Affective (Attitude)**

SECTION 2: INTRODUCTION TO STUDY GUIDE

When a dental student enters dental college, a new era of academic life begins. This study guide has been designed to help students sail smoothly during their transitional phase. The very first week is spent in familiarizing the students with the environment of Frontier Dental College.

1- Objectives of Study Guide

The purpose of this study guide is to:

- Inform students what they are expected to learn during their study period.
- Guide students on how the student-learning program has been organized, and how it would be implemented.
- Help students organize and manage their studies throughout the year.
- Inform students about the code of conduct at Frontier Dental College
- Inform on organization and management of the team at FDC. This will help you contact the right individual in case you have any difficulty.
- Describe the course content which will be taught and what the students are expected to learn.
- Impart the information on learning methods that you will experience during the course. The methods include tutorials, lectures, practical skills, experiments, dissection, field visits and research. These learning methods should help you to achieve the course objectives.
- Guides you about the available learning resources for the terms. These include books, computer-assisted learning programs, videos, and other aids
- Makes you aware about the contribution of internal evaluation and term examinations, on student's overall performance.
- Passes the information on the methods of assessment.
- Inform regarding the examination policy, rules and regulations.

SECTION 3: PROGRAM STRUCTURE AND OVERVIEW

THE MODULAR SYSTEM

Organization of modular curriculum and teaching

a. Each Academic Year is divided into 3 Modules of 3 months' duration each

- **First Year - Modules - 1,2,3**
- **Second Year - Modules - 4,5,6**
- **Third Year - Modules - 7,8,9**
- **Final Year - Modules - 10,11,12**

b. Learning objectives for each module are written down in the study guide issued at the beginning of each academic year to each student. Curriculum for each module can be provided on request.

c. A schedule is issued for each module re-enforced by a weekly schedule issued 2 weeks in advance of the teaching dates.

d. This includes lecture, CBL, Practical's, Demonstrations, Ward Clinics, and Classes in Skills Lab, Self-Study, and Library period.

e. The assessment schedules i.e., end of modules tests as well as period of preparation leave and timing of OSCE/ OSPE is given in the above schedule.

f. The assessment result is displayed on departmental notice boards and recorded in the Examinations Department FDC.

LEARNING STRATEGIES

- **Interactive Lectures**

The traditional lecture system is used to introduce a subject and discuss the broad concepts in that specific field of study. Interactive lectures to smaller groups remain an effective and essential way of teaching. More recent methods of learning and teaching, such as case-based learning and small group-based problem-solving sessions are also employed.

- **Small Group Based Learning**

Small group and tutorial sessions are regularly held to enable students to discuss the details of a lecture topic. Students are expected to prepare presentations on applied topics and discuss their implications with their fellow students. The lecturer acts as a facilitator. By participating in these group discussions, students can interact and learn from one another such as PBL, CBL and TBL etc.

- **Hands on Training**

Being in final year students will deal daily with patients in OPD, to gain, enhance and polish their clinical knowledge and skills. Lectures and tutorials will regularly be held for providing clinical orientation on the subjects.

- **Community-based Learning**

FDC is committed to provide the environment and training that would enable professionals to successfully contribute to the improvement of the health sector, particularly in less privileged communities under the Community-Oriented Medical Education Program.

The university involves its students in research-developing work in these designated communities. Students are encouraged to participate in the preventive and curative care and management of patients and their families in Primary Health Care field settings.

- **Problem Based Learning (PBL)**

PBL promotes active learning and critical thinking in small collaborative groups. In PBL, problem introduces a real patient or as hypothetical case. Students identify the key elements of the case, develop and test hypothesis based on pathophysiological mechanisms, decide on diagnosis, and discuss principles of management. Content of PBL reflects horizontal integration of curriculum. The development of PBL cases is a challenging process, as each case must reflect a defined set of learning objectives, have face validity, suit the student's stage of maturity, and fit with restraints

of time and resources. A typical PBL tutorial consists of usually 8 to 10 students and a tutor, who facilitates the session with minimum interference. The PBL tutorials comprised of three sessions of two hours and the time is scheduled in timetable approximately two weeks before.

The PBL comprised of seven-jumps (Maastricht) such as clarifying terms, defining problem(s), brainstorming, structuring and hypothesis, learning objectives, independent study, and synthesis/presentation.

- **Case-Based Learning (CBL)**

Case-based learning (CBL) is an adaptation of the PBL process and more generally used in clinical context to develop clinical reasoning and judgment. Written case studies, prepared by tutors and students are required to work together to identify clinical problems, prepare differential diagnoses and suggest potential investigations and treatment. Students set their own learning objectives and identify the learning resources required to confirm or refute their diagnostic possibilities. The CBL format is flexible. CBLs are overseen by facilitators who guide the students in case they are not on the right track as unlike PBLs, the CBL session must be completed in one day.

- **Team Based Learning**

Team Based Learning provides students with resource effective, authentic experience of working in teams to solve real life clinical problems.

ABBREVIATIONS:

ASSIG/AS	**Assignment**
BCQS	**Best Choice Questions**
CBL	**Case Based Learning**
CDC	**Curriculum Development Committee**
CME	**Continuous Medical Education**
CP	**Class Presentation**
CQ	**Class Quiz**
CR/CW	**Clinical Rotation/Clinical Work in OPD**
CS	**Clinical Session**
DOPS	**Direct Observational Procedural Skills**
HEC	**Higher Education Commission**
HO	**House Officers**

HOD	**Head of the Department**
IL	**Interactive Lecture**
MIT	**Modes of Information Transfer**
MOD	**Modular**
Mini-CEX	**Mini Clinical Evaluation Exercise**
OMFS	**Oral And Maxillofacial Surgery**
OPD	**Outpatient Department**
OSCE	**Objective Structured Clinical Evaluation**
OSPE	**Objective Structured Practical Evaluation**
PBL	**Problem Based Learning**
PMDC	**Pakistan Medical & Dental Council**
PPT	**Power Point Presentation**
PW	**Practical work**
QEC	**Quality Enhancement Cell**
SC	**Short case**
SEQS	**Short Essay Questions**
SGD/S	**Small Group Discussion/Session**
SGIS	**Small Group Interactive Session**
Skill Lab	**Phantom Lab**
SS	**Self -Study**
Viva	**Viva**
VD	**Visual Display**

COMPETENCIES AND LEARNING OUTCOMES OF

DENTAL UNDER-GRADUATES

COMPETENCIES

1. **Skillful**
2. **Knowledgeable**
3. **Community health promoter**
4. **Critical thinker**
5. **Professional**
6. **Researcher**
7. **Leader**

i. Skillful:

Under Graduates must be competent to:

1.1 Apply appropriate interpersonal and communication skills.

1.2 Apply psycho-social and behavioral principles in patient-centered health care.

1.3 Communicate effectively with individuals from diverse populations.

1.4 Apply basic dental morphology and application of dental materials on patients.

ii. Knowledgeable

A. Assessment, Diagnosis, and Treatment Planning

Under Graduates must be competent to:

2.1 Manage the oral health care of infant, child, adolescent, and adult, as well as unique needs of women, geriatric, and special needs patients.

2.2 Identify, prevent, and manage trauma, oral diseases, and other disorders.

2.3 Obtain, and interpret patient / medical data, including a thorough intra/extra oral examination, and use these findings to accurately assess and manage patients.

2.4 Select, obtain, and interpret diagnostic images for the individual patient.

2.5 Recognize the manifestations of systemic disease and how the disease and its management may affect the delivery of dental care.

2.6 Formulate a comprehensive diagnosis, treatment, and/or referral plan.

B. Establishment and Maintenance of Oral Health

Under Graduates must be competent to:

2.7 Follow universal infection control guidelines for all clinical procedures.

2.8 Manage pain and anxiety in the dental patient.

2.9 Diagnose temporo-mandibular joint disorders.

2.10 Manage periodontal diseases.

2.11 Develop and implement strategies for the clinical assessment and management of caries

2.12 Manage restorative procedures that preserve tooth structure, replace missing or defective tooth structure, maintain function, are esthetic, and promote soft and hard tissue health.

2.13 Manage developmental or acquired occlusal abnormalities.

2.14 Manage the replacement of teeth for the partially or completely edentulous patient.

2.15 Manage pulpal and peri-radicular diseases.

2.16 Manage oral surgical treatment needs.

2.17 Manage medical and dental emergencies.

2.18 Manage patient abuse and/or neglect.

2.19 Manage substance abuse.

2.20 Evaluate outcomes of comprehensive dental care.

2.21 Manage oral mucosal and osseous diseases.

iii. Community Health Promoter

Under Graduates must be able to:

3.1 Demonstrate skill in providing prevention, intervention, and educational strategies.

3.2 Demonstrate competency in promoting health and managing various oro-facial diseases while working in a team.

3.3 Recognize and appreciate the need to contribute to the improvement of oral health beyond those served in traditional practice settings.

iv. Critical Thinker

Under Graduates must be competent to:

4.1 Evaluate and integrate emerging trends in health care as appropriate.

4.2 Apply critical thinking and problem-solving skills while dealing with patients.

4.3 Evaluate and integrate best research outcomes with clinical expertise and patient values for evidence-based practice.

v. Professional

Under Graduates must be competent to:

5.1 Apply ethical and legal standards in the provision of dental care.

5.2 Practice within one's scope of competence and consult with or refer to professional colleagues when indicated.

vi. Researcher

Under Graduates must be competent to:

6.1 Apply the current research for innovations in treatment, keeping at par with international standards

6.2 Conduct independent research based on the community requirements

vii. Leader

Under Graduates must be able to:

7.1 Manage self, taking responsibility and utilizing the time to the best of his/her ability.

7.2 Demonstrate leadership skills effectively while working in a group or in a team.

7.3 Recognize and comply with the working system of any Institute.

SECTION 4: DEPARTMENTS & ACADEMIC SCHEDULES

INTRODUCTION TO DEPARTMENTS

Department of Anatomy

Department of Physiology

Department of Biochemistry

Department of Oral Biology & Tooth Morphology

	ANATOMY	Mode of Teaching	Mode of Assessment
1.	Describe the basic structure of cell	IL	BCQs
2.	Describe the different types of organelles and inclusion bodies	IL	BCQs
3.	Describe the surface modification of cell	IL	BCQs
4.	Define the different types of cell junctional complex	IL / SGIS	BCQs
5.	Explain the cell cycle	IL	BCQs
6.	Differentiate between mitosis and meiosis	IL	BCQs
7.	Identify the different stages of mitosis and meiosis	SGIS	OSPE
8.	Discuss anatomical terms	IL /SGIS	BCQs & OSPE
9.	Identify planes and sections with anatomical position of human body	SGIS	BCQs & OSPE
10.	Classify bones, joints, cartilages and muscles	IL /SGIS	SEQS, BCQs, OSPE
11.	Introduction to nervous system	IL	BCQ
12.	Identify different parts of compound microscope	PW	OSPE
13.	Discuss the process of tissue processing	PW	BCQs
14.	Describe the microscopic features of epithelial tissues (squamous, cuboidal,columnar, and transitional)	IL	SEQs, BCQs,OSPE
15.	Identify the epithelial tissues on a given slide (squamous, cuboidal, columnar andtransitional)	PW	SEQs, BCQs,OSPE
16.	Describe the microscopic features of connective tissues	IL	SEQs, BCQs
17.	Identify the various types of connective tissue on a given slide	PW	OSPE
18.	Describe the microscopic features of skeletal, cardiac and smooth muscles	IL	SEQS, BCQs
19.	Identify skeletal, cardiac and smooth muscles on a given slide	PW	OSPE
20.	Describe the microscopic features of different types of cartilage	IL	SEQS, BCQs
21.	Identify the microscopic features of hyaline, elastic and fibrocartilage on a given slide	PW	OSPE
22.	Describe the microscopic features of compact and spongy bone	IL	SEQS, BCQs
23.	Identify the microscopic features of compact and spongy bone on a given slide	PW	OSPE
24.	Differentiate between gross and microscopic features of artery, vein and capillaries	IL	SEQS, BCQs
25.	Identify the microscopic features of artery and vein	PW	OSPE
26.	Describe the microscopic features of integumentary system	IL	BCQs, SEQs
27.	Identify the microscopic features of integumentary system	PW	OSPE

28.	Identify male and female genital organs	SGS	OSPE
29.	Describe oogenesis and spermatogenesis	IL	SEQS, BCQs & OSPE
30.	Discuss the uterine and ovarian cycle	IL	BCQs
31.	Describe the events of 1st week of development	IL, TBL	SEQS, BCQs& OSPE
32.	Discuss the events of 2nd week of development	IL/ SGIS	SEQS & BCQs
33.	Describe the events of 3rd week of development	IL/ SGIS	SEQS & BCQs
34.	Identify different stages of zygote and 3rd week of development on a given model	SGIS	OSPE
35.	Discuss the fate of primitive streak and the related abnormalities	IL	SEQS & BCQs
36.	Describe the 4th week of development	IL	SEQS, BCQs
37.	Describe the development of placenta	IL/ SGIS	SEQS, BCQs, OSPE
38.	Enlist events from 5th – 8th week of development	IL	BCQs
39.	Enlist the events of the Fetal period	IL	BCQs
40.	Describe the process and types of twin pregnancy and name the sites of ectopic pregnancy	IL/SGIS	BCQS, OSPE
41.	Discuss the factors causing Teratogenesis	IL	BCQS
	PHYSIOLOGY		
42.	Describe the functional organization of human body.	IL / IS	SEQs, BCQs
43.	Explain the concept of homeostasis and physiological control systems.	IL /IS	CQ
44.	Differentiate between positive and negative feedback system with examples.	IL/IS	SEQs, BCQs
45.	Calculate total body water and its distributions.	PW	OSPE
46.	Explain briefly physical structure and organization of cell.	IL	SEQs, BCQs
47.	Describe the structure and functions of a typical cell membrane.	IL	SEQs, BCQs
48.	Define an organelle and discuss briefly the details of structure and functions of eachorganelle.	IL	CP, CQ
49.	Explain the role of membrane proteins as channels, carriers, pumps, receptors andenzymes.	IL	SEQs, BCQs,
50.	Describe the various modes of transport across the membrane including osmosis, diffusion, facilitated diffusion, active transport and bulktransport.	IL	SEQs, BCQs
51.	Distinguish excitable and non-excitable tissues.	IL	SEQs, BCQs
52.	Explain briefly the structure and properties of nerve fiber.	IL	SEQs, BCQs
53.	Classify nerve fibers on the basis of conduction velocity, diameter, and myelination.	IL	SEQs, BCQs
54.	Discuss how resting membrane potential is established and maintained.	IS, SGS	SEQs, BCQs
55.	Explain different stages of generation of action potential in nerve fiber.	SGS	SEQs, BCQs
56.	Differentiate between graded potential and action potential.	IL	SEQs, BCQs
57.	Define synapse and classify its types.	IL	SEQs, BCQs
58.	Describe neuromuscular junction and its disorders.	IL	SEQs, BCQs

59.	Describe mechanism of skeletal muscle contraction with special reference to slidingfilament theory.	IL, SGS	SEQs, BCQs
60.	Describe composition and function of blood & plasma proteins.	IL, PW	OSPE
61.	Describe the salient features of RBC &Erythropoiesis.	SGS	SEQs, BCQs
62.	Define erythropoiesis and describe its various stages.	IL	SEQs, BCQs
63.	Explain iron metabolism, synthesis, and degradation of hemoglobin	IL	SEQs, BCQs,PBL
64.	Define Anemias and classify its various causes and treatment.	IL	SEQs, BCQs,PBL
65.	Define white blood cells and classify its types.	IL	SEQs, BCQs
66.	Define immunity. Classify its various types in detail.	IL	SEQs, BCQs
67.	Describe the characteristic features of blood platelets.	IL	SEQs, BCQs
68.	Define hemostasis and describe extrinsic and intrinsic pathways of blood coagulation.	IL, PBL	SEQs, BCQs,
69.	Describe various types of blood groups.	IL	SEQs, BCQs
70.	Discuss blood transfusion and blood transfusion reactions.	SGS	OSPE, PBL
	BIOCHEMISTRY		
71.	Discuss the biochemical aspects of cell and biochemical composition of cell membrane.	IL, SGS	BCQs, SEQS
72.	Identify different types of instruments with their working.	PW	OSPE
73.	Identify the laboratory hazards and their importance.	PW	OSPE
74.	Discuss the cell organelles.	IL, SGS	BCQs SEQS
75.	Discuss the various modes of membrane transport.	IL, SGS	BCQs, SEQS
76.	Perform the preparation of solutions	PW	OSPE
77.	Elaborate the concept of pH and explain different types of Buffers with their mechanism of action	IL, SGS	BCQs, SEQS
78.	Discuss the buffering capacity & H.H equation	IL, SGS	BCQs, SEQs
79.	Identify pH of different solutions	PW	OSPE
80.	Discuss the chemistry of nucleotide and nucleoside	IL, SGS	BCQs, SEQs,
81.	Perform DNA extraction on onion cell	PW	OSPE
82.	Discuss the chemistry of nucleic acid	IL, SGS	BCQs, SEQs
83.	Discuss the structure, function & types of hemoglobin	IL, SGS	BCQS, SEQS
84.	Perform the estimation of HbA1c	PW	OSPE
85.	Discuss hemoglobinpathies & their Biomedical causes, Thalassemia, Hbs	IL, SGS	BCQS, SEQ
86.	Discuss the factor affecting & regulating the oxygen binding capacity hemoglobin	IL, SGS	BCQS, SEQS, CP
87.	Discuss the chemistry & biosynthesis of porphyrins & their clinical importance	IL, SGS	BCQS, SEQS,
88.	Perform the estimation of Serum Bilirubin	PW	OSPE
89.	Discuss the degradation of heme formation of bile pigment, it's types, transport & execration	IL, SGS	BCQS, SEQS,
90.	Discuss the mechanism of development of different types of jaundice	IL, SGS	BCQS, SEQS, CP
	ORAL BIOLOGY		
91.	Describe the boundaries of the oral cavity	IL	BCQs
92.	Define the terms vestibule, oral cavity proper, mucobuccal fold, frenum, alveolar mucosa, gingiva,	IL	BCQs

	exostoses, torus palatinus, and torus mandibularis		
93.	Define the landmarks in the floor of the mouth, hard and soft palate.	IL	BCQs
94.	Understand the basic structures of teeth including the enamel, dentine, pulp, periodontium, oral mucosa and salivary glands.	IL	BCQs
95.	Identify the demineralized and ground section of tooth in its socket.	PW	OSPE
96.	Enlist types of teeth and dentition and explain their function.	IL, SGS	BCQs
97.	Discuss the order and time of eruption of deciduous and permanent dentition.	IL, SGS	BCQs, SEQS
98.	Understand the difference between primarydentition, secondary dentition, and mixed dentition.	IL, SGS	BCQs, OSPE
99.	Identify the teeth using Universal system, Palmer notation system, and FederationDentaire Internationale (FDI) system	SGS	BCQs
100.	Identify a tooth using the numbering systems on a tooth model.	PW	OSPE/ PBL
101.	Differentiate between anatomical crown, clinical crown, anatomical root and clinical root.	IL, SGS	BCQs
102.	Understand the functions and differences that exist among incisors,canines, premolars, and molars.	IL, SGS	BCQs
103.	Identify line angle and point angles on surface of tooth	IL, PW	OSPE
104.	Identify the various anatomical landmarks of teeth. -Elevations on tooth -Depressions on tooth	IL, PW	BCQs, OSPE
105.	Define the landmarks present on the surface of root	IL	BCQs
106.	Assess the age of dentition using models.	PW	OSPE
107.	Identify anatomical landmarks on tooth.	IL, SGS	BCQs, OSPE
108.	Study the physiological considerations of formand function including: - Embrasure, contact point, interproximal space, Height of contour, Lobes	IL, DEMO	BCQs
109.	Identify anatomic features of maxillary and Mandibular central and lateral incisors.	IL, SGS	BCQs, SEQs
110.	Compare maxillary central incisors with maxillary lateral incisors	IL, SGS	BCQs, SEQs
111.	Compare maxillary incisors with their mandibular incisor counterparts	IL	BCQs, SEQs
112.	Identify the anatomic structure and landmarksof the canine.	IL	SEQs
113.	Compare the features of maxillary and mandibular canines	IL	BCQs, SEQs
114.	Draw five aspects of each tooth.	PW	SEQs, CQ
115.	Carve the morphological features of maxillary and mandibular anterior teeth on wax blocks.	PW	
116.	Classify salivary glands according to location, size, structure and type of secretion.	IL, TBL	BCQs, SEQs, OSPE

117.	Explain the sympathetic and parasympathetic nerve and blood supply of major salivary glands.	IL	BCQs, SEQs, OSPE
118.	Enlist the types of secretory acinar cells and ductal system.	IL, PBL	BCQs, SEQs, OSPE
119.	Differentiate between serous and mucous acini.	IL	BCQs, SEQs, OSPE
120.	Discuss the physiology of saliva including its composition, flow rate, functions, formation and ductal modification.	IL, SGS	BCQs, SEQs,OSPE
121.	Enlist the age changes of salivary glands.	IL	BCQs
122.	Interpret the general organization of the salivary Gland.	IL, PBL	OSPE
123.	Identify the secretory and ductal elements in a mixed salivary gland.	IL	OSPE
124.	Draw the serous, mucous cells and the other ductal cells of salivary glands	PW	OSPE
125.	Define Immunology and role of antibiodies	IL	BCQs
126.	Describe the role of different antibodies	IL	BCQs
127.	Discuss the composition, functions & physiology of saliva and functions of salivary proteins.	IL	BCQs
128.	Discern the composition, classification, and microstructural features of bone.	IL	OSPE, BCQs,SEQs,
129.	Comprehend the structure and origin of cell types seen in bone.	IL	SEQs
130.	Appreciate how the structure of bone cells is related to their function.	IL	SEQs
131.	Describe the formation of osteoblasts and osteoclasts.	IL	SEQs
132.	Discuss the role of different hormones on the structure of bone.	IL	SEQs, BCQs
133.	Discuss the process of resorption and formation of bone during remodeling	IL	SEQs
134.	Draw the histological slides of bone, including the different type of lamellae and osteon.	PW	OSPE
135.	Understand the basic structure of osteoclast	IL	
136.	Define Alveolar bone.	IL	BCQs
137.	Classify Alveolar bone.	IL	BCQ
138.	Describe the nature of alveolar bone proper and supporting bone.	IL	BCQs
139.	Study parts of alveolar process.	PW	OSPE
140.	Describe the histological structure of alveolar bone proper.	PW	OSPE
Behavioral Sciences			
Introduction to Behavioral Sciences			
141.	Discuss the role of dentist and desirable attitude toward patients.	IL	BCQs, SEQs
Communication			
142.	Discuss Various types of communication	IL	BCQs, SEQs
143.	Discuss various mode of communication.	IL	BCQs, SEQs
Ethics			
144.	Discuss role of ethics in health profession	IL	BCQs, SEQs
145.	Discuss Hippocratic oath-Do's and Don'ts	Presentation	BCQs, SEQs

Introduction to Leadership & Management			
146.	Discuss role of leadership and management in dental practices	IL	BCQs, SEQs

1st Year BDS Study Guide FMDC

Commencement of 1ST Module		Weekly Schedule of Module I ANATOMY		
Activity	**Week**	**Lecture 1**	**Lecture 2**	**Lecture 3**
Academic Session – BDS First Professional	Week- 1	Introduction to human body, discuss the anatomical terms (8)	Identify planes and sections (9)	Describe the basic structure of cell (1)
	Week- 2	Describe the different types of organelles and inclusion bodies (2)	Describe surface modification of cell, define different types of cell junctional complex (3, 4)	Describe the microscopic features of epithelial tissues (I) (simple) (14)
	Week- 3	Explain cell cycle, Differentiate between mitosis and meiosis (5, 6, 7)	Describe the microscopic features of epithelial tissues(stratified) (II) (14)	Classification of bone (10)
	Week- 4	Discuss the uterine and ovarian cycle (30)	Describe the microscopic features of connective tissues (I) (16)	Describe the microscopic features of connective tissues (II) (16)
	Week- 5	Describe oogenesis and spermatogenesis I (29)	Classification of muscles (10)	Describe the microscopic features of skeletal, cardiac and smooth muscles (18)
	Week- 6	Describe oogenesis and spermatogenesis II (29)	Describe the classification & microscopic features of different types of cartilage (10, 20)	Introduction to nervous system (11)
	Week- 7	Describe the phases of fertilization in events of 1st week of development (31)	Describe the microscopic features of compact and spongy bone (22)	Discuss the events of second week of development (32)
	Week- 8	Describe the events of 3rd week of development (33)	Discuss the fate of primitive streak and related abnormalities (35)	Differentiate between gross and microscopic features of artery, vein, and capillaries (24)
	Week- 9	Describe the 4th week of development (36)	Classification of joints (10)	Describe the development of placenta I (37)
	Week10	Enlist events from 5th – 8th week of development (38)	Describe the development of placenta II(37)	Enlist events of fetal period (39)
	Week 11	Describe the process and types of Twin pregnancy and sites of ectopic pregnancy (40)	Discuss the factors causing Teratogenesis (41)	Integumentary System (27)
	Week 12	**THEORY AND VIVA EXAMINATION**		

Commencement of 1ST Module		Weekly schedule of Module I PHYSIOLOGY	
Activity	**Week**	**Lecture 1**	**Lecture 2**
Academic Session – BDS First Professional	Week 1	Introduction to Physiology (42, 43, 45)	Homeostasis (43, 44)
	Week 2	Composition & function of cell membrane (46, 47)	Functions of organelles & nucleus (48)
	Week- 3	Genetics & protein synthesis (48)	Membrane transport, Membrane Potential &Action Potential (49, 50,54, 55, 56)
	Week- 4	Classification & properties of nerve fiber. (51, 52, 53)	Synapse & NMJ (57, 58)
	Week 5	Muscle contraction 1 (59)	Muscle contraction II (59)
	Week- 6	Introduction & Composition, function of blood & plasmaprotein (60)	RBC & Erythropoiesis (61,62,63)
	Week- 7	Anemia (types, causes & treatments) (64)	White Blood Cell (65)
	Week- 8	Immunity – 1 (66)	Immunity – 2 (66)
	Week- 9	Platelets & Coagulation (67, 68)	Blood groups, Blood transfusion & transfusion reactions (69, 70)
	Week-10	Revision	Revision
	Week-11	Revision	Revision
	Week-12	**THEORY AND VIVA EXAMINATION**	

		Weekly Schedule of Module I BIOCHEMISTRY	
Activity	**Week**	**Lecture-1**	**Lecture-2**
Academic Session – BDS First Professional	Week-1	Biochemical aspects of cell I (71, 74)	Biochemical aspects of cell II (71, 74)
	Week-2	Biochemical composition of cell membrane (71)	Membrane transport (75)
	Week-3	pH Buffer system (77)	Buffering capacity & H.H equation (78)
	Week-4	Chemistry of nucleoside (80)	Chemistry of nucleotide (80)
	Week-5	Chemistry of nucleic acid-1 (82)	Chemistry of nucleic acid-2 (82)
	Week-6	Structure, function & types of hemoglobin (83)	Hemoglobinopathies & their Biomedicalcauses, Thalassemia, HbS (85)
	Week-7	Factor affecting & regulating the oxygen binding capacity hemoglobin(86)	Chemistry & Biosynthesis of porphyrins & their clinical importance-I (87)
	Week-8	Chemistry & Biosynthesis of porphyrins &their clinical importance-II (87)	Degradation of heme formation of bile pigment, it's types, transport & excretion-I (89)
	Week-9	Degradation of heme formation of bile pigment, it's types, transport & excretion-II(89)	Mechanism of development of different types of jaundice (90)
	Week-10	Student presentation	Student presentation
	Week-11	Student presentation	Student presentation
	Week-12	**THEORY AND VIVA EXAMINATION**	

1st Year BDS Study Guide FMDC

Commencement of 1ST Module		Weekly Schedule of Module I ORAL BIOLOGY	
Activity	**Week**	**Lecture 1**	**Lecture 2**
Academic Session – BDS First Professional	Week- 1	Introduction to Oral Biology(91, 92, 93, 94)	Tooth morphology I(96, 97, 98)
	Week- 2	Tooth morphology II (101, 102, 103, 104, 105)	Eruption sequence,(97)
	Week- 3	Orofacial Musculature (108)	Maxillary Incisors (109)
	Week- 4	Mandibular Incisors(110)	Max & Mand Laterals Incisors(111)
	Week- 5	Max & Mand Canines (112, 113)	Salivary glands I (116 - 118)
	Week- 6	Salivary glands II (119- 121)	Salivary glands III (122- 123)
	Week- 7	Immunology (125, 126)	Oral Physiology (127)
	Week- 8	Bone I (128, 129, 130)	Bone II (131, 132, 133)
	Week- 9	Alveolar process(136, 137, 138)	Revision
	Week-10	Test on tooth morphology	Test on Salivary Glands
	Week-11	Test on Immunology and Oral Physiology	FAT (Formative Assessment Test)
	Week-12	**THEORY AND VIVA EXAMINATION**	

Module II

	ANATOMY	Mode of Teaching	Mode of Assessment
1.	Discuss the components of reticulo-endothelial System	IL	BCQ
2.	Describe the macroscopic and microscopic features of lymphoid organs: a. Lymph node b. Tonsils c. Thymus d. Spleen	IL	BCQ, SEQ
3.	Identify the microscopic features of lymphoid organs on given slides	PW	OSPE
4.	Identify the skeleton of the upper limb	SGIS	OSPE
5.	Name the muscles of the pectoral region, arm, and Forearm	SGIS	BCQ, OSPE
6.	Correlate the location and structure of cubital fossa with its clinical significance	SGIS	BCQs, OSPE
7.	Relate the extent and branches of the brachial artery with its clinical significance	SGIS	BCQ
8.	Identify the skeleton of the lower limb	SGIS	OSPE
9.	Name the muscles of the gluteal region, and thigh	SGIS	BCQs, OSPE
10.	Identify the bones of rib cage	SGIS	OSPE
11.	Discuss the boundaries and contents of mediastinum and thoracic cage	SGIS	BCQ
12.	Discuss the gross anatomy of the heart	IL, TBL	BCQs, OSPE
13.	Discuss the development of the cardiovascular System	IL	BCQs, OSPE
14.	Discuss the great vessels of head and neck	IL	BCQs, OSPE
15.	Describe the gross morphology and blood supply of nose	IL	BCQ, SEQ
16.	Relate the location and structure of paranasal air sinuses with their clinical significance	IL	BCQ, SEQ & OSPE
17.	Describe the gross morphology of pharynx	SGIS	BCQ, SEQ
18.	Explain the macroscopic features of larynx (cartilages, joints, ligaments, membranes, cavity, muscles and neurovascular supply)	SGIS	BCQ, SEQ,OSPE
19.	Describe the gross morphology of trachea and bronco-pulmonary segments	IL	BCQ
20.	Identify the anatomical structures related to cardiovascular and respiratory systems on a chest X- ray	SGIS	OSPE
21.	Describe the microscopic features of upper and lower respiratory tract	IL	BCQs, OSPE
22.	Identify the microscopic features of the respiratory system (trachea & lungs) on given slides	PW	OSPE
23.	Name the parts of gastrointestinal tract	SGIS	OSPE
24.	Describe the gross morphology of the oral cavity and tongue	IL	BCQ, SEQ
25.	Describe the microscopic features of tongue	IL	BCQs, SEQ
26.	Identify the microscopic features of tongue on a given slide	PW	OSPE

27.	Describe the gross structure of salivary glands (Parotid, submandibular and sublingual)	IL	BCQ, SEQ, OSPE
28.	Describe the microscopic features of salivary glands	IL	BCQ, SEQ
29.	Identify the microscopic structures of Parotid, submandibular and sublingual glands on given slides	PW	OSPE
30.	Discuss the location and structure of the liver, pancreas and gall bladder	SGIS	OSPE
31.	Describe the microscopic features of the hepatobiliary system	IL	BCQ
32.	Identify the microscopic features of the hepatobiliary system on a given slide	PW	OSPE
33.	Name the organs of the urinary system	SGIS	OSPE
34.	Describe the osteology of exterior of skull (Norma verticalis, occipitalis, frontalis and basalis)	SGIS	OSPE
35.	Explain the osteology of the interior of skull (vault, anterior, middle and posterior cranial fossae)	SGIS	OSPE
36.	Identify the foramina of skull and the structures passing through them	SGIS	OSPE, BCQ, SEQ
37.	Explain the external and internal attachments of skull	SGIS	OSPE, BCQ
38.	Describe the development of: a. Skull b. Cervical vertebrae c. Pharyngeal apparatus d. Face d. Tongue e. Palate	IL	SEQ, BCQ, OSPE
39.	Correlate the features and attachments of maxilla with its clinical significance	SGIS	BCQ, SEQ, OSPE
40.	Describe the gross features of soft palate	IL	OSPE, BCQ
41.	Discuss the features of mandible and hyoid bone	SGIS	OSPE, BCQ
42.	Describe the changes that occur in the mandible in different age groups (child, young, old)	SGIS	BCQ
43.	Identify the features of cervical vertebrae	SGIS	OSPE, BCQ
44.	Describe the scalp and superficial temporal region	IL	BCQ, SEQ
45.	Relate the attachments of facial muscles with their actions	IL	BCQ, OSPE
46.	Explain the neurovascular supply of face, with course and branches of facial artery	IL	BCQ, SEQ & OSPE
47.	Describe the attachments, actions and neurovascular supply of the muscles of mastication	IL	BCQ, SEQ, & OSPE
48.	Correlate the structure of temporomandibular joint with its neurovascular supply and movements	IL	BCQ, SEQ &OSPE
49.	Describe the boundaries, communications and contents of pterygopalatine and infratemporal fossae	IL	BCQ, SEQ, &OSPE
50.	Discuss the parasympathetic ganglia present in head	IL	BCQ, SEQ
51.	Demonstrate over simulated subject the surface markings of: a. Facial artery b. Common carotid artery c. External carotid artery d. Internal jugular vein e. External jugular vein f. Parotid gland and duct g. Submandibular duct	SGIS	OSPE

52.	Identify the normal anatomical structures visible on radiographs of head and neck	SGIS	OSPE
	PHYSIOLOGY		
53.	Describe the functional organization/lay out of cardiovascular system.	IL	SEQs, BCQs
54.	Explain cardiac action potential and spread of impulse through different chambers of heart.	IL	SEQs, BCQs
55.	Enumerate different heart sounds and describe mechanism of production of heart sounds.	IL, SGS	SEQs, BCQs
56.	Define ECG. Discuss its various intervals and segments along with physiological basis.	IL, PW	OSPE
57.	Describe various leads of ECG.	PW	OSPE
58.	Define hemodynamics and explain laws governingthe flow of blood through blood vessel wall.	IL	SEQs, BCQs,VIVA
59.	Define microcirculation. Elaborate upon the forces of capillary membrane at the arterial and venousend.	IL, SGS	SEQs, BCQs
60.	Define cardiac output and venous return.	IL	SEQs, BCQs
61.	Enumerate factors affecting cardiac output and venous return.	IL	SEQs, BCQs
62.	Define blood pressure and discuss mechanisms regulating it.	PBL	SEQs, BCQs
63.	Define cardiac cycle. Explain its phases with asuitable diagram.	IL, PW	SEQs, BCQs,OSPE
64.	Discuss the functional organization of respiratory system.	IL	SEQs, BCQs
65.	Explain mechanics of respiration.	IL, PBL	SEQs, BCQs
66.	Discuss alveolar ventilation/perfusion ratio with its abnormalities	IL	SEQs, BCQs
67.	Enumerate lung volumes and capacities with its values.	PW	SEQs, BCQs
68.	Explain diffusion of gases with various applicablelaws.	IL, SGS	SEQs, BCQs
69.	Discuss mechanism of transport of oxygen and Carbon-dioxide with graphical representations.	SGS, PW	BCQs, OSPE
70.	Describe the regulation of respiration.	IL	SEQs,BCQs,VIVA
71.	Define hypoxia and discuss its various types with examples.	PBL	SEQs, BCQs
72.	Explain respiratory adaptations during exercise.	IL	SEQs, BCQs
73.	Describe functional organization of renal system.	IL	SEQs, BCQs
74.	Discuss the structure and function of a nephron.	IL, SGS	SEQs, BCQs
75.	Define GFR and discuss factors regulating it.	IL	SEQs, BCQs
76.	Explain various mechanisms of tubular reabsorption and secretion.	IL	SEQs, BCQs
77.	Describe renal clearance.	SGS	SEQs, BCQs
78.	Describe countercurrent mechanism for formation of concentrated urine.	IL	SEQs, BCQs, CP
79.	Describe functional organization of gastrointestinal tract.	IL,	SEQs, BCQs,
80.	Explain different characteristics features of GI smooth muscles.	IL, PW	SEQs, BCQs,OSPE
81.	Discuss enteric nervous system.	IL	SEQs, BCQs
82.	Discuss properties, functions, regulation and applied aspects of salivary secretion.	PBL	SEQs, BCQs
83.	Enumerate GIT secretions and explain mechanismof synthesis of secretion and their regulation.	IL	SEQs, BCQs

84.	Discuss GIT motility and its reflexes.	IL	SEQs, BCQs
85.	Discuss the phases of swallowing and swallowing reflex in detail.	IL, SGS	SEQs, BCQs
86.	Discuss the stages of vomiting and vomiting reflex in detail.	IL, SGS	SEQs, BCQs
87.	Discuss the regulation of gastric emptying & phases of gastric secretion	IL, SGS	SEQs, BCQs
88.	Describe functions of liver and gall bladder.	IL	SEQs, BCQs
89.	Discuss mechanism of synthesis of pancreatic secretions and its regulation.	IL	SEQs, BCQs
90.	Explain functions of stomach small and largeintestine.	IL, SGS	SEQs, BCQs
91.	Discuss GI disorders.	PBL	SEQs, BCQs
	BIOCHEMISTRY		
92.	Perform the detection of different proteins in given solution	PW	OSPE
93.	Discuss the definition classification & importance of amino acids	IL, SGS	BCQS, SEQS
94.	Discuss the definition classification & importance of proteins	IL, SGS	BCQS, SEQS,
95.	Discuss the structure physical & chemical properties of amino acids	IL, SGS	BCQS, SEQS
96.	Discuss the importance of amino acids and maintenance of body pH	IL, SGS	BCQS, SEQS,
97.	Perform the separation of amino acids by paper chromatography	PW	OSPE
98.	Discuss the structure level of protein & clinical importance	IL, SGS	BCQS, SEQS,
99.	Discuss the plasma protein & immunoglobulin's clinical importance	IL, SGS	BCQS, SEQS
100.	Discuss the different principles of spectrophotometry	PW	OSPE
101.	Discuss the importance of protein & nutrition, kwashiorkor & marasmus	IL, SGS	BCQS, SEQS
102.	Detection of carbohydrates in given solution	PW	OSPE
103.	Classify carbohydrates with its biomedical importance	IL, SGS	BCQs, SEQs,CP
104.	Discuss the properties & Biomedical importance of carbohydrates	IL, SGS	BCQs, SEQs
105.	Discuss the chemistry of monosaccharaides and their biomedical importance	IL, SGS	BCQs, SEQs
106.	Discuss the chemistry of disaccharides and their biomedical importance	IL, SGS	BCQs, SEQs,
107.	Discuss the chemistry of oligosaccharides and their biomedical importance	IL, SGS	BCQs, SEQs,
108.	Discuss the chemistry of polysaccharides and their biomedical importance	IL, SGS	BCQs, SEQs,
109.	Discuss the different types of enzymes specificities with examples.	PW	OSPE
110.	Discuss the properties of enzymes	IL, SGS	BCQs, SEQs
111.	Discuss the mode of action & regulation of enzymes	IL, SGS	BCQs, SEQs
112.	Discuss the factors affecting enzymes activity	IL, SGS	BCQs, SEQs

113.	Discuss the mechanism of action of different inhibitors of enzyme	IL, SGS	BCQs, SEQs
114.	Discuss the isoenzyme clinical importance, application clinical &therapeutic uses of enzymes	IL, SGS	BCQs, SEQs,CP
115.	Discuss the gastric, pancreatic, bile juice/ digestion & absorption carbohydrates	IL, SGS	BCQs, SEQs
116.	Discuss the digestion & absorption ofprotein and nucleic acid with clinical importance	IL, SGS	BCQs, SEQs
117.	Discuss the digestion & absorption of lipids with clinical importance	IL, SGS	BCQs, SEQs
	ORAL BIOLOGY		
118.	Describe and identify the buccal, lingual, mesial, distal, and occlusal aspect for maxillary 1st & 2nd premolars	IL, SGS	BCQs, SEQs,OSPE
119.	Describe the traits that are useful in distinguishing permanent maxillary first premolar from the maxillary second premolar	IL, SGS	BCQs, SEQs,OSPE
120.	Describe and identify the buccal, lingual, mesial, distal, and occlusal surfaces for mandibular 1st and2nd premolars.	IL, SGS	BCQs, SEQs
121.	Differentiate mandibular first premolar from the mandibular second premolar	IL, SGS	BCQs, SEQs,OSPE
122.	Compare morphology of maxillary premolars with mandibular premolars	IL, SGS	BCQs, SEQs, OSPE,
123.	Sketch five aspects of each tooth.	PW	OSPE
124.	Learn to identify individual tooth models.	PW	OSPE
125.	Carve the morphological features of premolars using wax blocks.	PW	OSPE
126.	Enlist the derivatives of germ layers.	IL	BCQs, SEQs,
127.	Discuss the derivatives of the branchial arches, pouches and cleft.	IL	CQ
128.	Define primary epithelial band, vestibular and dental lamina.	IL, SGS	BCQs, SEQs
129.	Understand the complexity of ectodermal–mesenchymal interactions during tooth development.	IL	CQ
130.	Describe the bud, cap, and bell stages and thevarious layers found in each.	IL	BCQs, SEQs
131.	Describe the following terms: Enamel cord, Enamel niche, Enamel septum, Enamel navel, and Enamel knot	IL	BCQs, SEQs
132.	Discuss the role of: Dental follicle, Dental papilla, Dental lamina, Hertwig's epithelial root sheath.	IL	BCQs, SEQs
133.	Discuss the theories of tooth type determination	IL	BCQs, SEQs
134.	Identify developmental anomalies related to different stages of tooth development.	IL	BCQs
135.	Discuss the process of root formation	IL	SEQs
136.	Describe the process of single-rooted and multi-rooted tooth development	IL	BCQs, SEQs

137.	Study and identify histological features of the bud stage, cap stage and bell stage.	PW	OSPE
138.	Discuss the organic and inorganic composition and the physical features of enamel.	IL, SGS, TBL	BCQs, SEQs,
139.	Discern the features of enamel crystallites and their orientation and apprehend how the structure of enamel withstands the forces of mastication.	IL	BCQs
140.	Understand the concept of enamel prism, rod sheath and inter-rods, aprismatic enamel.	IL	BCQs, SEQs
141.	Describe the different patterns and direction of enamel rods.	IL	BCQs, SEQs
142.	Comprehend the histological features of enamel including incremental lines, bands of Hunter and Schreger, Perikymata, Gnarled Enamel.	IL	BCQs, SEQs
143.	Differentiate between enamel spindles, enamel tuft and enamel lamellae.	IL	BCQs, SEQs
144.	Discuss the significance of Enamel-Dentine Junction.	IL	BCQs, SEQs OSPE
145.	Enlist the age changes in enamel.	IL	SEQs, OSPE
146.	Describe the life cycle of Ameloblast and related developmental defects including Amelogenesis Imperfecta.	IL	SEQs, OSPE
147.	Interpret the life cycle of ameloblast with the help of a schematic diagram.	SGS, PW	OSPE
148.	Recognize the histologic structure of enamel.	PW	OSPE
149.	Describe the organic and inorganic composition of dentine.	IL	BCQs
150.	Define the physical features of dentine.	IL	BCQs
151.	Explain the curvature, structure, and contents of dentinal tubules.	IL	BCQs, SEQs
152.	State the different types of dentine including primary, secondary, tertiary, hyaline and granular layer.	IL	BCQs, SEQs, OSPE
153.	Enlist the differences between mantle and circumpulpal dentine.	IL	SEQs, OSPE
154.	Interpret the different types of incremental lines found in dentine.	IL	BCQs, SEQs,
155.	Understand the age changes that occur in dentine.	IL	BCQs
156.	Enumerate the theories of dentine sensitivities.	IL	SEQs
157.	Explain the process of dentinogenesis including patterns of mineralization.	IL, SGS	BCQs
158.	Compare the processes of amelogenesis and dentinogenesis.	IL, SGS	BCQs
159.	Draw the histological features of dentine	PW	OSPE
160.	Explain the composition and functions of Dental Pulp.	IL	BCQs, SEQs,
161.	State the zones of dental pulp.	IL	SEQs
162.	Discuss the role of various cell types seen in pulp.	IL	SEQs
163.	Explain the blood supply & nerve supply of dental pulp.	IL	BCQs
164.	Study age changes in pulp.	IL	SEQs
165.	Draw the histological picture of zones of dental pulp.	PW	OSPE
166.	Describe the mesenchymal facial processes around the developing mouth.	IL	SEQs

167.	Describe the role of facial processes in theformation of the face.	IL	BCQs
168.	Discuss the developmental process of primary & secondary palate.	IL	SEQs
169.	Discuss the mechanisms involved in elevation andfusion of the palatal shelves.	IL	BCQs, SEQs
170.	Describe the mechanisms involved in the formation of cleftlip & palate.	IL	BCQs, SEQs
171.	Explain the environmental and genetic stimuli responsible for development of facial and palatal clefts.	IL	BCQs, SEQs
172.	Discuss features of mandible and the process of mandible formation.	IL	BCQs
173.	Describe the fate of Meckel's cartilage.	IL	SEQs
174.	Describe the process of maxilla formation	IL	BCQs
175.	Describe the neurovascular supply of maxilla and mandible	IL	BCQs
176.	Describe the processes involved in development of anterior two-third and post one-third of tongue and relate this to the innervation of the tongue once fully developed.	IL	BCQs, SEQs
	Behavioral Sciences		
177.	Demonstrate competency in reflection writing and feedback	IL	BCQs, SEQs
Communication			
178.	Discuss factor affecting communication.	IL	BCQs, SEQs
Ethics			
179.	Discuss responsibilities of health professionals	IL	BCQs, SEQs
Leadership and management			
180.	Discuss various leadership theories.	IL	BCQs, SEQs

1st Year BDS Study Guide FMDC

Commencement of 2nd Module		Weekly Schedule of Module IIANATOMY		
Activity	**Week**	**Lecture 1**	**Lecture 2**	**Lecture 3**
Academic Session – BDS First Professional	Week- 1	Discuss the components of reticuloendothelial system (1)	Microscopic features of tonsils and thymus (2)	Microscopic features of spleen (2)
	Week- 2	Describe the scalp and superficial temporal region (44)	Describe the development of skull & cervical vertebrae (38)	Describe the boundaries, communication and contents of pterygopalatine fossa (49)
	Week- 3	Describe the development of pharyngeal apparatus I (38)	Describe the boundaries, communications and contents of the infratemporal fossa (49)	Describe gross morphology of nose & blood supply of nose (15)
	Week- 4	Describe the development of pharyngeal apparatus II (38)	Relate location and structure of Para nasal sinuses with their clinical significance (16)	Describe gross morphology of oral cavity and tongue(I) (24) Describe gross features of hard and soft palate (40)
	Week- 5	Describe the development of palate (38)	escribe gross morphology of oral cavity and tongue II (24)	Describe microscopic features of tongue (25)
	Week- 6	Development of tongue (38)	Gross features of salivary glands (27)	Microscopic features of salivary glands (28)
	Week- 7	Describe the facial muscles with their action (45)	Explain the neurovascular supply of face, with course and branches of facial artery (46)	Describe great vessels of head and neck (14)
	Week- 8	Describe the development of face (38)	Describe the development of palate (38)	Describe gross morphology of pharynx (17)
	Week- 9	Describe the morphology of larynx I (18)	Describe the morphology of larynx II (18)	Describe the gross morphology of trachea and bronchopulmonary segments (19)
	Week- 10	Describe the microscopic features of upper and lower respiratory tract (21)	Describe microscopic features of hepatobiliary tract and pancreas(31)	Describe the gross anatomy of heart (12)
	Week-11	Describe the development of heart (13)	Correlate the structure of temporomandibular joint with its neurovascular supply and movements (48)	Revision
	Week- 12	**THEORY AND VIVA EXAMINATION**		

Commencement of 2ND Module		Weekly Schedule of Module II PHYSIOLOGY		
Activity	**Week**	**Lecture 1**	**Lecture 2**	
Academic Session – BDS First Professional	Week- 1	Introduction to CVS & Cardiac action potential (53, 54)	Cardiac contraction & Impulse conduction pathway (53,54)	
	Week- 2	Electrocardiogram (ECG) (56, 57)	Cardiac cycle (62)	
	Week- 3	Heart sounds and murmurs (55)	Introduction to haemodynamics & functions of blood vessels (58)	
	Week- 4	Cardiac output and venous return (60)	Blood pressure and its regulation (61)	
	Week- 5	Micro circulation (59)	Functional organization of respiratory system & pulmonary ventilation. (63, 64, 67)	
	Week- 6	Alveolar ventilation & ventilation perfusion ratio (V/P Ratio) (65)	Diffusion of gases (67)	
	Week- 7	Transport of Oxygen & Carbon dioxide (68)	Regulation of respiration (69)	
	Week – 8	Hypoxia and its types (70)	Respiratory adaptations during exercise (71)	Introduction to renal system & Nephron & GFR & its regulation (72, 73, 74)
	Week- 9	Filtration, reabsorption & secretion (73, 75)	Renal clearance (76)	Countercurrent mechanism (77)
	Week- 10	Introduction to GIT, GI muscle function & Enteric nervous system (78, 79,80)	GIT secretions, motility and reflexes (82, 83, 84)	Saliva & Vomiting (81, 85)
	Week- 11	Regulation of gastric emptying & phases of gastric secretion (86)	Functions of stomach, small & large intestine. (89)	Functions of gall bladder, liver & pancreatic secretion. (87,88)
	Week- 12	**THEORY AND VIVA EXAMINATION**		

Commencement of 2ND Module		Weekly Schedule of Module II BIOCHEMISTRY	
Activity	**Week**	**Activity**	**Week**
Academic session – BDS First Professional	Week- 1	Definition, classification & importance of amino acids(93)	Definition classification & importance of proteins (94)
	Week- 2	Structure physical & chemical properties of amino acids (95)	Importance of amino acids and maintenance of body pH (96)
	Week- 3	Structure level of protein & clinical importance (98)	Plasma protein & clinical importance (99)
	Week- 4	Immunoglobulin's & clinical importance (99)	Importance of protein & nutrition, kwashiorkor & marasmus (101)
	Week- 5	Chemistry of Carbohydrates (103)	Properties & Biomedical importance of carbohydrates (104)
	Week- 6	Monosaccharides-1 (105)	Monosaccharides-2 (105)
	Week- 7	Disaccharides and Oligosaccharides (106,107)	Polysaccharides-1 (108)
	Week- 8	Polysaccharides-2 (108)	Definition of enzyme withclassification (109)
	Week- 9	Properties of enzymes (110)	Mode of action & regulation ofenzyme (111)
	Week-10	Factors affecting enzymes activity (112)	Mechanism of action of different inhibitors of enzyme (113)
	Week-11	Isoenzyme clinical importance, applicationclinical & therapeutic uses of enzymes (114)	Discuss the gastric, pancreatic, intestinal & bile juices with their composition and digestion & absorption carbohydrates with their clinicaldisorder (115)
	Week-12	**THEORY AND VIVA EXAMINATION**	

Commencementof 2ND Module		Weekly Schedule of Module II- Oral Biology	
Activity	**Week**	**Lecture 1**	**Lecture 2**
Academic Session – BDS First Professional	Week-1	Maxillary premolars(118, 119, 122)	Mandibular Premolars(120, 121, 122)
	Week-2	Embryology (126, 127)	Tooth Development I (128,129,130)
	Week-3	Development of tooth II (131,132)	Development of tooth III (133, 134)
	Week-4	Root Formation (135, 136)	Enamel Structure I (138, 139, 140))
	Week-5	Enamel structure II(141, 142, 143, 144, 145)	Amelogenesis I(146)
	Week-6	Amelogenesis II(146)	Dentine I(149, 150, 151, 152,153)
	Week-7	Dentine II(154, 155, 156)	Dentinogenesis (157,158)
	Week-8	Dental Pulp(160, 161, 162, 163, 164)	Development of Face (166, 167)
	Week-9	Development of Palate (168, 169)	Cleft Lip and Palate (170, 171)
	Week -10	Development of Mandible (172, 173)	Development of Maxilla (174, 175)
	Week-11	Development of Tongue (176)	Test on Tooth Development and Enamel
	Week -12	**THEORY AND VIVA EXAMINATION**	

MODULE III

	ANATOMY	Mode of Teaching	Mode of Assessment
1.	Explain the general layout of the nervous system and its classification.	IL	BCQs
2.	Discuss the gross anatomy & crosssections of spinal cord with blood supply.	IL	BCQs, SEQs
3.	Discuss the ascending tracts of spinal cord with their functions and clinicalcorrelates.	IL	BCQs, SEQs
4.	Discuss the descending tracts of the spinal cord with their functions andclinical correlates.	IL	BCQs, SEQs
5.	Explain the gross structure of brain stem (medulla, pons and midbrain).	SGIS	BCQs, SEQs & OSPE
6.	Discuss the cross sections of brain stem(medulla, pons and midbrain) at different levels with clinical correlates.	IL	BCQs, SEQs &OSPE
7.	Discuss in detail cranial nerves I – XII.	IL	BCQs, SEQs & OSPE
8.	Discuss the gross structure of cerebellum and fibers associated with it.	IL	BCQs, SEQs & OSPE
9.	Explain the cranial meninges with theirneurovascular supply and clinical correlates.	SGIS	BCQs, OSPE
10.	Explain the Dural infoldings/ reflections (falx cerebri, tentorium cerebelli, falx cerebelli and sellar diaphragm).	SGIS	BCQs, OSPE
11.	Relate the location and communications of Dural venous sinuses with theirclinical significance.	SGIS	BCQs, SEQs &OSPE
12.	Demonstrate the sulci and gyri of cerebrum on the given model.	SGIS	BCQs, OSPE
13.	Explain the functions of different cortical areas of cerebrum with their lesions.	SGIS	BCQs, SEQs
14.	Describe the white matter (commissural, projection and association fibers) of brain.	IL	BCQs
15.	Relate the parts of basal nuclei of the brain with clinical disorders.	IL	BCQs
16.	Describe the gross structure of autonomic nervous system.	IL	BCQs
17.	Describe the microscopic features of: a. Spinal cord	IL	BCQs, SEQs

	b. Cerebellum c. Cerebral Cortex		
18.	Identify the microscopic features ofspinal cord, cerebellum and cerebral cortex.	PW	OSPE
19.	Explain the ventricular system of brain with clinical correlates.	SGIS	BCQs, SEQs, OSPE
20.	Describe the blood supply of the brain.	SGIS, TBL	BCQs, SEQs, OSPE
21.	Describe the vertebral system of veins.	SGIS	BCQs
22.	Explain the gross anatomical features of eye with its neurovascular supply.	SGIS	BCQs, OSPE
23.	Describe the microscopic features of eye.	IL, PW	OSPE
24.	Describe the extra-ocular muscles with their nerve supply and actions.	SGIS	BCQs, SEQs, OSPE
25.	Identify the extra-ocular and facial muscles on a given model.	SGIS	OSPE
26.	Explain the gross features of ear (external, middle and internal) with itsneurovascular supply and clinical correlates.	SGIS	BCQs, SEQs, OSPE
27.	Describe the development of brain and spinal cord with its anomalies.	IL	BCQs, SEQs, OSPE
28.	Discuss cervical fascia.	IL	BCQs
29.	Explain the anterior and posterior triangles of the neck.	SGIS	BCQs, SEQs, OSPE
30.	Describe the lymphatic drainage of head and neck.	IL	BCQs
31.	Discuss the ganglia and plexus present in the neck.	IL	BCQs
32.	Identify the muscles and joints in the pre-vertebral region of the neck.	SGIS	OSPE
33.	Describe the location, structure and blood supply of pituitary gland.	IL	BCQs, SEQs
34.	Explain the location and structure of thyroid.	IL	BCQs, SEQs
35.	Explain the location and structure of parathyroid gland.		BCQs, SEQs
36.	Discuss the location and structure of endocrine pancreas.	IL	BCQs
37.	Explain the location and structure of suprarenal glands.	IL	BCQs
38.	Describe the developmental anatomy of the endocrine glands.	IL	BCQs, SEQs
39.	Describe the microscopic features of endocrine glands	IL	BCQs, SEQs
40.	Identify the microscopic features of endocrine glands on the given slide.	PW	OSPE
41.	Demonstrate the examination of cranial nerves over the simulated subject	SGS	OSPE
	PHYSIOLOGY		
42.	Describe the functional organization of central nervous	IL, PBL	SEQs, BCQs

	system.		
43.	Discuss synaptic transmission along with its disorders.	IL	SEQs, BCQs
44.	Classify Sensory receptors.	IL, SGS	SEQs, BCQs
45.	Trace the sensory pathways.	IL	OSPE
46.	Describe pain physiology and its pathway.	IL,	SEQs, BCQs
47.	State the different types of headaches and briefly describe each of them.	IL	SEQs, BCQs
48.	Explain pyramidal and extrapyramidal system along with motor pathways.	IL	SEQs, BCQs
49.	Classify spinal reflexes and discuss in detail.	PW	SEQs, BCQs, OSPE
50.	Describe functions of basal ganglia along with its neurons.	IL	SEQs, BCQs
51.	Discuss functional organization of Autonomic nervous system.	IL	SEQs, BCQs
52.	Explain the phenomenon of Reticular activating system and sleep in relationship to different waves of EEG.	IL	SEQs, BCQs, OSPE
53.	Discuss the different lobes and areas of cerebral cortex with their functions.	IL, IS	SEQs, BCQs
54.	Discuss functions of cerebellum with special reference to its neuronal circuitry.	IL	SEQs, BCQs
55.	Discuss physiological anatomy of eye and image forming mechanisms.	IL	SEQs, BCQs
56.	Discuss photo transduction and visual processing.	IL, SGS	SEQs, BCQs,CP
57.	Discuss physiology of hearing.	IL	SEQs, BCQs, CP
58.	Explain functions of vestibular system.	IL	SEQs, BCQs
59.	Discuss physiology of gustation and olfaction.	IL	SEQs, BCQs,CQ
60.	Explain the protective mechanisms of brain.	IL, IS	SEQs, BCQs
61.	Discuss the formation, circulation, and absorption of CSF.	IL, IS	SEQs, BCQs
62.	Define endocrine secretions and enumerate different hormones and theirmechanism of action.	IL	SEQs, BCQs
63.	Describe hormones of hypothalamus and pituitary gland.	IL, IS	SEQs, BCQs
64.	Discuss parathyroid hormones and calcium metabolism.	IL, IS	SEQs, BCQs
65.	Describe functions of thyroid hormones and its disorders.	IL, IS	SEQs, BCQs
66.	Describe functions of adrenal cortical hormones and its disorders.	IL, IS	SEQs, BCQs
67.	Describe functions of adrenal medullary hormones and its disorders.	IL, IS	SEQs, BCQs
68.	Discuss endocrine functions of pancreas and its disorders.	IL, PBL	SEQs, BCQs
69.	Discuss skin and body temperature regulation.	IL, IS	SEQs, BCQs
70.	Discuss male reproductive system.	IL, IS	SEQs, BCQs
71.	Discuss female reproductive system.	IL, IS	SEQs, BCQs
BIOCHEMISTRY			
72.	Discuss the definition & classification of lipids	IL, SGS	BCQS, SEQS
73.	Discuss the biomedical importance of lipids	IL, SGS	BCQS, SEQS
74.	Perform the detection of different lipids in given solution	PW	OSPE
75.	Discuss the definition & classification of fatty acids	IL, SGS	BCQS, SEQS

76.	Discuss the chemistry of essential fatty acids & their biomedical importance	IL, SGS	BCQS, SEQs
77.	Discuss the importance of cholesterol & lipoproteins	IL, SGS	BCQS, SEQS
78.	Discuss the chemical & Physical properties of triglycerides	IL, SGS	BCQS, SEQS
79.	Discuss the Identification of fat (Saponification, Iodine No.)	IL, SGS	BCQS, SEQS
80.	Discuss the rancidity its types & Biomedical importance	IL, SGS	BCQS, SEQS
81.	Perform the analysis of normal and abnormal urine	PW	OSPE
82.	Discuss the sources, Absorption,regulation, biomedical importance,clinical aspect of Na & K	IL, SGS	BCQs, SEQs
83.	Discuss the sources, Absorption, regulation,biomedical importance, clinical aspect of Cl , PO_4 & Ca	IL, SGS	BCQs, SEQs
84.	Discuss the sources, absorption,regulation, biomedical importance,clinical aspect of Iron & Zinc	IL, SGS	BCQs, SEQs
85.	Discuss the sources, absorption,regulation, biomedical importance, clinical aspect of Mg, selenium, iodine	IL, SGS	BCQs, SEQs
86.	Perform milk analysis by separating different components	PW	OSPE
87.	Discuss the sources, absorption, regulation, biomedical importance, clinical aspect of copper, chromium,cadmium, manganese	IL, SGS	BCQs, SEQs,CP
88.	Discuss the sources, absorption,regulation, biomedical role, clinical aspectdeficiency of vitamin A & E	IL, SGS	BCQs, SEQs
89.	Discuss the sources, absorption, regulation,biomedical role, clinical aspects/deficiency of vitamin D, K	IL, SGS	BCQs, SEQs
90.	Discuss the sources, absorption,regulation, biomedical role, clinical aspectdeficiency of vitamin C	IL, SGS	
91.	Discuss the sources, absorption,regulation, biomedical role, clinical aspectdeficiency of vitamin B1 & Folic acid	IL, SGS	
92.	Discuss the sources, absorption, regulation, biomedical role, clinical aspect deficiency of Pyridoxine, Riboflavin	IL, SGS	BCQs, SEQs
93.	BCQs, SEQs	IL, SGS	BCQs, SEQs
94.	BCQs, SEQs	IL, SGS	BCQs, SEQs
95.	Perform CSF analysis	PW	OSPE
	ORAL BIOLOGY		
96.	Discuss the morphology of maxillary 1st Molar	IL	BCQs, SEQs
97.	Describe the morphology of maxillary 2nd & 3rd Molar	IL	BCQs, SEQs
98.	Understand the morphology of Mandibular 1stMolar	IL	BCQs, SEQs
99.	Describe the morphology of Mandibular 2nd & 3rd Molar	IL	BCQs, SEQs
100.	Compare the morphology of maxillary molars with mandibular molars	IL	SEQs
101.	Differentiate between deciduous and permanentdentition	IL	SEQs
102.	Discuss the root canal morphology of all teeth	IL	SEQs
103.	Identify the landmarks of molars on tooth models	PW	OSPE

104.	Sketch five aspects of maxillary & mandibular 1st molars on graph	PW	SEQs, OSPE
105.	Carve the morphological feature of maxillary and mandibular 1st molar usingwax block	PW	OSPE
106.	Define and classify occlusion in permanent dentition	IL	BCQs
107.	Describe the following terms: • Centric relation • Centric occlusion • Overjet • Overbite • Balanced occlusion • Group function	IL	BCQs
108.	Describe the Incisor, Canine and Molar classification.	IL	BCQs
109.	Define curve of Spee, curve of Wilson, sphere of Monson.	IL	BCQs
110.	Describe different face types and profiles	IL	BCQs
111.	Relate the facial profiles with gender and age.	IL	BCQs
112.	Understand the components and functions of oral mucosa	IL, PW	BCQs
113.	Describe the main types of oral mucosa	IL, PW	OSPE
114.	Interpret the structural variations associated with different types of oral mucosa	IL, PW	OSPE
115.	Describe histological features of lining and masticatory mucosa.	IL, PW	BCQs, SEQs, OSPE
116.	Describe the histology of keratinized & non-keratinized epithelium	IL,	BCQs, SEQs, OSPE
117.	Differentiate between keratinized & non-keratinized epithelium	IL, PW, TBL	BCQs, SEQs, OSPE
118.	Enlist the lamina propria and basement membrane	IL, PW	SEQs,OSPE
119.	Appreciate the clinical diseases associated with each component	IL,	BCQs,
120.	Describe the specialized mucosa of tongue and different types of papillae.	IL	BCQs, SEQs, OSPE
121.	List the types of lingual papillae according to their location and taste sensation	IL, PW	BCQs, SEQs, OSPE
122.	Compare different types of papillae with each other	IL, PW	BCQs, SEQs, OSPE
123.	Describe the features of the gingiva	IL, PW	OSPE
124.	Discuss the clinical parts and fibers of gingiva.	IL, PW	BCQs, SEQs, OSPE
125.	Discuss the types of junctions found in oral mucosa.	IL	BCQs, SEQs, OSPE
126.	Differentiate between sulcular and junctional Epithelium	IL	SEQs
127.	Define mucogingival and dento-gingival junction.	IL, PW	OSPE
128.	Enlist the arrangement of the principal collagen bundles and their fibrils, the orientations and the mode	IL	BCQs, OSPE

	of attachment of these fibers into tooth and bone.		
129.	Describe the role of different cells present in PDL	IL	BCQs, SEQs
130.	Discuss the changes that take place with age in the periodontal ligament.	IL	BCQs
131.	Enlist the features that make PDL a specialized Connective tissue.	IL	BCQs
132.	Explain the blood and nerve supply of PDL.	IL	BCQs
133.	Discuss the composition, functions and physical features of cementum.	IL	BCQs, SEQs
134.	Identify and describe the histological features of cementum including its types,distribution.	IL	BCQs, SEQs
135.	Describe the lines of Salter	IL	BCQs
136.	Discuss the importance of cementum– enamel and cementum-dentinal junction.	IL	BCQs
137.	Differentiate between primary and secondary cementum.	IL	SEQs
138.	Enlist age changes in cementum.	IL	BCQs
139.	Describe the process of cementogenesis.	IL	SEQs
140.	Discuss the fate of Hertwig root sheath	IL	BCQs
141.	Classify the types of joints.	IL, PBL	SEQs
142.	Describe the structure of TMJ.	IL	BCQs
143.	Describe the different components of TMJ including capsule, condyle, articular fossa, synovial membrane.	IL, TBL	BCQs, SEQs, OSPE
144.	Describe the role of different ligaments associatedwith TMJ.	IL	BCQs
145.	Comprehend the biomechanics of the joints including movements initiated by muscles ofmastication.	IL, TBL	BCQs
146.	Describe the different types of nerve endingspresent in TMJ.	IL	BCQs
147.	State the neurovascular supply of TMJ.	IL	BCQs
148.	Enumerate the features of Pre-eruptive, Eruptive & Post-eruptive phases of tootheruption	IL	BCQs, SEQs
149.	Describe the various theories of tooth eruption	IL	BCQs, SEQs
150.	Explain the pattern of shedding of teeth & factors involved in it.	IL	BCQs, SEQs,
151.	Discuss the process of repair and regeneration of the dental hard and soft tissues.	IL	BCQs, SEQs
152.	Enlist features of following clinicalanomalies: • Cleft Lip and Palate, • Treacher Collins syndrome, • Pierre Robin syndrome, • Down's syndrome, • Hemifacial microsomia, • Apert's syndrome, • Crouzon syndrome • Di George Syndrome	IL	BCQs, SEQs
153.	Describe the significance of primary dentition	IL	SEQs, BCQs
154.	Recall the eruption timing and sequence of primary and permanent dentition	IL	SEQs, BCQs, OSPE

155.	Understand the detailed description of all anterior primary teeth	IL	SEQs, BCQs, OSPE
156.	Understand the detailed description of all posterior primary teeth	IL	SEQs, BCQs, OSPE
157.	Identify the number of pulp horns and root canals in each primary tooth	IL	BCQs
158.	Define forensic dentistry	IL	BCQs
159.	Discuss the methods of identifying unidentified individuals using data from dental tissues	IL	BCQs
160.	Describe the methods of chronological age estimation from tooth models and radiographs	IL	BCQs
161.	Discuss the applications forensic dentistry	IL	BCQs
Behavioral Sciences			
Leadership and Management			A
162.	Discuss Non-Verbal Communication	IL	BCQs, SEQs
163.	Discuss effective communication in dentistry.	IL	BCQs, SEQs
164.	Discuss importance of communication in leadership and management.	IL	BCQs, SEQs
Ethics			
165.	Discuss dentist interaction with patients and colleagues.	IL	BCQs, SEQs

Commencement of 3rd Module		Weekly Schedule of Module III Anatomy		
Activity	**Week**	**Lecture 1**	**Lecture2**	**Lecture3**
Academic Session – BDS First Professional	Week- 1	Explain the general layout of the nervous system and its classification (1)	Discuss the gross anatomy of spinal cord and its blood supply (2)	Describe the microscopic features of spinal cord (17)
	Week- 2	Discuss the ascending tracts of spinal cord with their functions & clinical correlates (I) (3)	Discuss the ascending tracts of spinal cord with their functions & clinical correlates (II) (3)	Discuss the descending tracts of the spinal cord with their functions and clinical correlates (4)
	Week- 3	Discuss the cross section of spinal cord (2)	Discuss the cross section of medulla oblongata (6)	Discuss the gross & microscopic structure of cerebellum and fibers associated with it (8, 17)
	Week- 4	Discuss the cross section of Pons (6)	Discuss the cross section of Midbrain (6)	Describe white matter (commissural, projection & association fibers) of brain (14)
	Week- 5	Describe the development of spinal cord (27)	Relate parts of basal nuclei of brain with clinical disorders (15)	Describe the microscopic features of cerebrum (16)
	Week- 6	Introduction to cranial nerves, discuss CN I (56)	Cranial nerve II (7)	Describe the microscopic features of eye (57)
	Week- 7	Cranial nerve III, IV and VI (7)	Cranial nerve V (7)	Cranial nerve VII (7)
	Week- 8	Describe the development of brain 27)	Cranial nerve VIII (7)	Cranial nerve IX (7)
	Week- 9	Cranial nerve X (7)	Cranial nerve XI & XII (7)	Discuss cervical fascia (28)
	Week- 10	Describe the lymphatic drainage of head and neck (30)	Discuss the ganglia and plexus present in the neck 31)	Describe the location, structure & blood supply of pituitary gland 33)
	Week-11	Describe development & microscopic features of pituitary gland (38, 39)	Explain the location and structure of thyroid and parathyroid gland (35)	Describe development and microscopic features of thyroid and parathyroid gland (38, 39)
	Week-12	**THEORY AND VIVA EXAMINATION**		

Commencement of 3rd Module		Weekly Schedule of Module IIIPHYSIOLOGY	
Activity	**Week**	**Lecture 1**	**Lecture 2**
Academic Session – BDS First Professional	Week- 1	Functional organization of Nervoussystem (43)	Synaptic transmission and disorders (44)
	Week- 2	Sensory receptors (45)	ANS (51)
	Week- 3	Sensory pathways (46)	Motor pathways + Spinal reflexes (48, 49)
	Week- 4	Pain physiology and headache (47)	Basal ganglia + RAS, Sleep, EEG (50, 52)
	Week- 5	Cerebellum (53)	Vision and image forming (54)
	Week- 6	Photo-Transduction & visual processing (55)	Physiology of Hearing (56)
	Week- 7	Vestibular system (57)	Gustation & Olfaction (58)
	Week- 8	Introduction to endocrinology &mechanism of action of hormones(60)	Hypothalamus & pituitary (61)
	Week- 9	Parathyroid hormone & calcium Metabolism (61)	Thyroid hormone (62)
	Week-10	Adrenal cortex (63)	Adrenal medulla (64)
	Week- 11	Skin and temperature regulation (66)	Endocrine role of pancreas (65)
	Week- 12	**THEORY AND VIVA EXAMINATION**	

Commencement of 3rd Module		Weekly Schedule of Module IIIBiochemistry	
Activity	**Week**	**Lecture-1**	**Lecture-2**
Academic Session – BDS First Professional	Week-1	Define & classify lipids (72)	Biomedical importance of lipids(73)
	Week-2	Definition & classification of fatty acids (75)	Essential fatty acids & their biomedical importance (76)
	Week-3	Importance of cholesterol & lipoproteins (77)	Chemical & physical Properties of triglycerides(78)
	Week-4	Identification of fat (Saponification), Iodine No. (79)	Rancidity its types & Biomedical importance(80)
	Week-5	Sources, Absorption, regulation, biomedical importance, clinical aspect ofNa & K (82)	Sources, Absorption, regulation, biomedical importance, clinical aspect of Cl, PO4 & Ca (83)
	Week-6	Sources, Absorption, regulation, biomedical importance, clinical aspect of iron & Zinc (84)	Sources, Absorption, regulation, biomedical importance, clinical aspect of Mg., selenium,iodine (85)
	Week-7	Sources, Absorption, regulation, biomedical importance, clinical aspect of copper, chromium, cadmium, manganese (87)	Sources, Absorption, regulation, biomedical role, clinical aspect deficiency of vitamin A & E (88)
	Week-8	Sources, Absorption, regulation, biomedical role, clinical aspects/ deficiency of vitamin D, K (89)	Sources, Absorption, regulation, biomedicalrole, clinical aspect deficiency of vitamin C (90)
	Week-9	Sources, Absorption, regulation, biomedical role, clinical aspect deficiency of vitamin B1 & folic acid (91)	Sources, Absorption, regulation, biomedical role, clinical aspect deficiency of Pyridoxine,riboflavin (92)
	Week-10	Sources, Absorption, regulation, biomedical role, clinical aspect deficiency of nicotinic acid & biotin (93)	Sources, Absorption, regulation, biomedicalrole, clinical aspect deficiency of vitamin B12 (94)
	Week-11-12	**THEORY AND VIVA EXAMINATION**	

Commencement of 3rd Module		Weekly Schedule of Module III Oral Biology	
Activity	**Week**	**Lecture 1**	**Lecture 2**
Academic Session – BDS First Professional	Week- 1	Maxillary 1st molar (96)	Maxillary 2nd & 3rd molar (97)
	Week- 2	Mandibular 1st molar (98)	Mandibular 2nd & 3rd molar (99-100)
	Week- 3	Primary & Permanent Dentition (101)	Root Canal Morphology (102)
	Week- 4	Occlusion (105, 106)	Occlusion (107, 108, 109)
	Week- 5	Facial Profiles (110, 111)	Oral Mucosa I (112-115)
	Week- 6	Oral Mucosa II (116-119)	Oral Mucosa III (120-127)
	Week- 7	Cytoskeleton (128)	PDL (129-132)
	Week- 8	Cementogenesis & Cementum (133-140)	TMJ (141-147)
	Week- 9	Eruption & Shedding of teeth (148-150)	Repair & Regeneration (151)
	Week-10	Syndromes of Head & Neck (152)	Anatomy of Primary Dentition (153-157)
	Week-11	Forensic Dentistry (158 - 160)	Test on Histology
	Week-12	**THEORY AND VIVA EXAMINATION**	

LEARNING RESOURCES

Department of Anatomy

Department of Physiology

Department of Biochemistry

Department of Oral Biology & Tooth Morphology

ANATOMY

BOOKS

1. Clinical Anatomy Seventh Edition by Richard Snell
2. Junqueira's Basic Histology: Text and Atlas, Latest Edition by Anthony Mescher
3. The Developing Human, Latest Edition, Clinically Oriented Embryology. Authors: Keith Moore T. V. N. Persaud Mark Torchia
4. Clinical Neuroanatomy, by Richard S. Snell, Latest edition.

E-BOOKS

1. BRS Cell Biology and Histology 6th Edition
2. BRS Gross Anatomy 5th Edition
3. Netter atlas of Human Anatomy
4. BRS Neuroanatomy 4th Edition
5. Difiores Atlas of Histology 11th Edition
6. Last Anatomy Regional and applied 9th Edition
7. Wheater's Functional Histology 5th Edition
8. Grant's Atlas of Anatomy 13th ed.
9. Gray's Anatomy 39th ed.
10. Neurohistology
11. Junqueira Basic Histology
12. Netter Clinical Anatomy
13. Langman's Medical Embryology 2003
14. Clinical Oriented Anatomy KLM
15. BRS Gross Anatomy by Kyung W Chung
16. BRS Cell Biology and Histology by Leslie P. Gartner

17. BRS Neuro-anatomy by Doughals J, Gould
18. High yield Embryology
19. BRS Embryology

    Before we born embryology
20. The development human clinical oriented embryology 9th
21. High Yield Embryology
22. Thieme Atlas of Anatomy, General Anatomy and Musculoskeletal System
23. Text Book of Anatomy: Head and Neck by Visharm Sing

PHYSIOLOGY

BOOKS

1. Textbook of Medical Physiology, latest Edition. Authors: John Hall Arthur Guyton John Hall
2. Medical Physiology for Undergraduate Students, Latest Edition. Authors: Indu Khurana
3. Review of Medical Physiology (Lange Basic Science). By William F. Ganong
4. Human Physiology: From Cells to Systems, Latest Edition. By Lauralee Sherwood.

E-BOOKS

1. Sherwood Human Physiology 3rd Edition
2. Guyton text book of medical physiology 11th Edition
3. Guyton Text Book of Medical Physiology 12th Edition.
4. USMLE Step 1 Physiology (lecture notes)
5. Sherwood Human Physiology for cell to system 7th edition.
6. Medical Physiology 11th edition.
7. Ganong Review of Medical Physiology
8. BRS Physiology by Constanzo
9. Jaypee Essential of Medical Physiology
10. Principal Anatomy and Physiology by Totora
11. Pocket companion by Guyton
12. Medical physiology for undergraduate by Khurana
13. Medical Physiology: Principles for clinical Medicine

BIOCHEMISTRY

BOOKS

1. Harpers Illustrated Biochemistry (Lange Medical Book) by Robert K. Murray, David A. Bender
2. Biochemistry (Lippincott Illustrated Reviews Series) latest Edition by Denise R. Ferrier
3. Text book of Biochemistry with clinical correlations. Thomas M. Devein (Reference Book)

E-BOOKS

1. Harper the Biochemistry 26th
2. Lehniger principle of biochemistry 4th
3. USMLE Step 1 Biochemistry and Genetic (lecture notes)
4. USMLE Step 1 Biochemistry and Genetic (lecture notes)
5. Lippincott biochemistry 6th ed.
6. Text Book of Medical Biochemistry by Chatterjee 8th Edition.
7. BRS Biochemistry

ORAL BIOLOGY & TOOTH MORPHOLOG

Oral Histology Books

1. Oral Anatomy, Histology and Embryology 5th Edition.
2. Ten Cate's Oral Histology: Development, Structure, and Function. 9th Edition.
3. Oral Development and Histology. By James K. Avery
4. Orban's Oral Histology and Embryology. by S.N. Bhaskar, C.L. Anderson

Tooth Morphology Books

1. Wheeler Dental Anatomy, Physiology and Occlusion 9th ed.
2. Woelfel's Dental Anatomy, Enhanced Edition, 9th edition

FRONTIER MEDICAL COLLEGE ABBOTTABAD EXCELLENCE & INNOVATION