

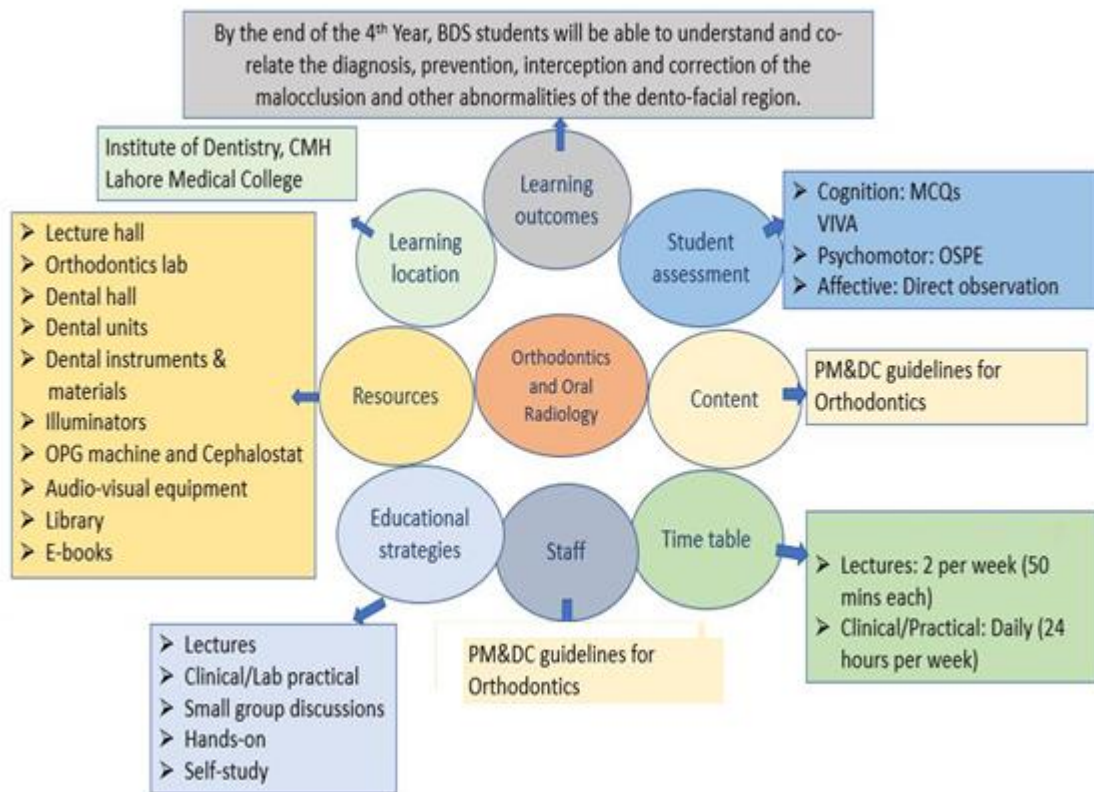


STUDY GUIDE ORTHODONTICS

Final Year BDS

INTRODUCTION TO ORTHODONTICS

It is a branch of dentistry that creates delicate balance between aesthetics and occlusion. In other words it is concerned with the diagnosis, prevention, interception and correction of the malocclusion and other abnormalities of the dento-facial region.



Resources:

- Academic Staff
- Support Staff
- Infrastructure

Teaching Resources

Sr. #.	Faculty Name	Designation as per PM&D Requirements	Qualification
1	Prof. Dr. Saad Asad	Professor	BDS, BSc, FCPS
2	Dr. Huma Ghazanfar Kiani	Assistant Professor	BDS, FCPS
3	Dr. Saadia Naureen	Assistant Professor	BDS, FCPS
4	Dr. Khaliq Aman Rono	Senior Registrar	BDS, MCPS Trainee
5	Dr. Ujala Sideeq	Demonstrator	BDS
6	Dr. Zarnab	Demonstrator	BDS

Support Staff

Orthodontics Department		
1	Babar Abdullah	Dental Surgery Assistant
2	Muhammad Usman	Dental Surgery Assistant
3	Haseeb Ahmed	Dental Surgery Assistant
4	Shahid Abbasi	Dental Surgery Assistant
5	Muhammad Hasnain	Dental Surgery Assistant
6	Shuja Zahid	Dental Surgery Assistant

7	Abdul Qadir	Dental Technician
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Infrastructure

Sr. #.	Infrastructure Resources	Quantity
1	Operating Hall	1
2.	Specialist Clinic	1
3.	Staff Rooms	3
4.	Ceph Room / Discussion Room	1
5.	Orthodontics Dental Laboratory	1
6.	Dental Units	10+1
7.	Dental Stools <ul style="list-style-type: none">• Operating Hall• Orthodontics Dental Laboratory	10 24
8.	Illuminators	10
9	OPG Machine and Cephalostat	2
10	Reception	1
11	Departmental Library	1
12	Dental Instruments and Materials	As per PMDC Requirements

TEACHING AND LEARNING STRATEGIES

Multiple instructional strategies will be used including Interactive Lectures, SDL, Group Discussions, Evidence Based Dentistry (EBD), Case Based Discussions (CBD), Assignments, Practical and Clinical Rotations.

(i) Methods for achieving cognitive objectives

- Interactive lectures using audio visual aids on power point presentation
- Small group discussions
- Hands on demonstrations
- Tutorials
- SDL
- EBD

(ii) Methods for achieving psychomotor objectives

- Diagnosis and Treatment Planning
- Patient Handling
- Clinical skills

(iii) Methods for achieving affective objectives

- Interaction with peers, group members, teachers, support staff and patients etc.
- Case Based Discussion (CBD)
- Oral presentations by students
- Assignments

LEARNING METHODOLOGIES

INTERACTIVE LECTURES

In large group, the lecturer introduces a topic or common clinical conditions and explains the underlying phenomena through questions, pictures, videos of patients; exercise etc. students are actively involved in the learning process.

SMALL GROUP DISCUSSION (SGD)

This format helps students to clarify concepts acquire skills or attitudes. Sessions are structured with the help of specific exercise such as patient case, interviews or discussion topics. Students exchange opinions and apply knowledge gained from lectures, tutorials and self-study. The facilitator role is to ask probing questions, summarize, or rephrase to help clarify concepts.

CASE- BASED DISCUSSION

A small group discussion format where learning is focused around a series of questions based on a clinical scenario. Students' discuss and answer the questions applying relevant knowledge gained in clinical and basic health sciences during the module.

CLINICAL ROTATIONS (CR)

Clinical rotations for clinical subjects like Operative Dentistry, Orthodontics, Prosthodontics and Oral Surgery are scheduled for student learning.

SELF DIRECTED LEARNING & MODIFIED SELF DIRECTED LEARNING

Students' assume responsibilities of their own learning through individual study, sharing and discussing with peer, seeking information from Learning Resource center, teachers and resource persons within and outside the college. Students can utilize the time within the college scheduled hours of self- study.

EVIDENCE BASED DENTISTRY

Evidence-based dentistry (EBD) integrates the dentist's clinical expertise, the patient's needs and preferences, and the most current, clinically relevant evidence. All three are part of the decision-making process for patient care.

ASSIGNMENTS

Learning through small tasks in the form of assignments will be conducted regularly to evaluate all the three domains of knowledge.

CURRICULUM IMPLEMENTATION

Curriculum implementation refers to putting into practice the official document including course content, objectives, learning and teaching strategies.

- (i) **Lectures delivery by:**
 - Prof. Dr. Saad Asad (Professor)
 - Dr. Huma Ghazafar Kiani (Assistant Professor)
 - Dr. Saadia Naureen (Assistant professor)

- (ii) **Registrars for clinics/practical and small group discussion sessions:**
 - a. Dr. Khaliq Aman Rono
 - b. Dr. Zarrah Wasim Zafar
 - c. Dr. Warda Zafar

- (iii) **Support staff:**
 - a. Dental surgery assistants: 6
 - b. Dental technician: 1

- (iv) **Computer Assistant:** 1 as nominated by the college

Time Frame:

Course duration:

- Lectures: 38 weeks
- Clinical rotations: 9 weeks per rotation

Lectures:

- Wednesday (8:00 to 8:50 am)
- Thursday (8:50 to 9:40 am)

Practical/ clinical visits:

- Monday – Thursday (10:00 am to 3:00 pm)
- Friday (9:00 to 1:00 pm)
- Saturday (10:00 am to 3:00 pm)

Self-study:

- 10 hours during the course

Table of specification for Teaching, Learning Objectives and Assessment

TOPICS	LEARNING OBJECTIVES	FACULTY	LEARNING DOMAIN (CPA)	LEARNING STRATEGY	ASSESSMENT			
Orthodontics					MCQ	Clinical	Viva	OSPE
A) Introduction to the Orthodontics (Time Allocation: Lectures: 3 hour)								
Introduction to the Orthodontics	Define Orthodontics and related terminologies i.e. overjet, open bite, deep bite, incisor irregularity, etc.	Dr Huma Kiyani	C	Interactive lectures	2	X	Viva	X
	Specify branches of Orthodontics and their role.							
	Assess Benefits & Risks of Orthodontic Treatment							
B) Development of Dentition & Occlusion (Time Allocation: Lectures: 3 hour)								
Development of Dentition & Occlusion	Discuss Gum Pad Stage & its clinic importance	Prof. Dr Saad Asad	C	Interactive lecture	5	X	Viva	X
	Discuss Primary Dentition (features, timing & sequence of eruption of teeth)							
	Relate primary dentition with its clinical relevance							
	Explain Mixed Dentition Stage in relation to loss of deciduous teeth and eruption of permanent teeth		C	Interactive lecture				
	Relate features of mixed dentition with the future dental outcome		C	Interactive lecture				
	Signify the space related issues in Mixed dentition and its relation with the development of malocclusion							
	Perform Mixed Dentition analysis and estimate Nolla Stages of Tooth Development							

C) Growth and Development (Time Allocation: Lectures: 8 hour)

Growth & Development	Differentiate between Growth & development	Dr Saadia Noureen			8	X	Viva	X
	Explain Attributes of Growth (Pattern, Variability, Dimensions, Velocity Curve, Timing Curve, Scammon's Curve)		C	Lecture				
	Differentiate between different theories of Growth Control		C	Lecture				
	Specify different areas and determinants of growth control		C	Lecture				
	Relate Pre-natal Growth with Post natal growth of different areas of Craniofacial region including Maxilla & Naso-maxillary Complex		C	Lecture				
	Discuss Pre-natal and Post natal growth of Mandible with special emphasis to Scamann's Curve		C	Lecture				
	Discuss jaw rotations.		C	Lecture				
	Specify the growth and development of TMJ		C	Lecture				
	Clinical relevance of Growth & Development		C	Interactive Lecture				
	Evaluate growth status of patients with Hand & wrist radiograph & CVM		P	DSL/ SGD + Assignment				

D) Occlusion: & Malocclusion Time Allocation: Lectures: 2 hours

Occlusion	Define normal and abnormal occlusion, introduction and definition of ideal occlusion.	Prof. Dr Saad Asad	CP	Interactive lecture/Small group discussion	1	X	Viva	OSPE
	Discussion of the Andrew's six keys of occlusion, CO-CR shift and canine guided group function.		CP	Interactive lecture/Small group discussion				

E) Etiology of Malocclusion: Time Allocation: Lectures: 4 hours

Etiology of Malocclusion	Relate causes of malocclusion with embryological & Intra-uterine disturbances	Prof. Dr Saad Asad	C	Interactive Lecture	3	X	Viva	X
	Signify dental, muscular & neurological disturbances as the cause of malocclusion		C	Interactive Lecture				
	Specify role of genetics disturbances in causing malocclusion		CPA	Student Presentations				
	Specify role of environmental disturbances in causing malocclusion (Thumb Sucking)		CPA	Student Presentations				
	Specify role of environmental disturbances in causing malocclusion (Mouth Breathing & Tongue Thrust)		CPA	Student Presentations				
F) Classification of Malocclusion: Time Allocation: Lectures: 2 hours								
Classification of Malocclusion	Discuss Angle, Incisor Classification and IOTN	Prof. Dr Saad Asad	C	Student Presentations	3	X	Viva	X
	Relate Ackerman Proffit Classification with Prioritization		C	Interactive Lecture				
	Apply Angle & Incisor classification on Cast	Dr Huma Kiyani	P	SGD				
G) Diagnosis & Treatment Planning: Time Allocation: Lectures: 17 hours								
Diagnostics	Discuss Principles of Diagnosis & Treatment Planning	Prof. Dr Saad Asad	C	Interactive Lecture	2	X	Viva	OSPE
	Discuss & Perform History and Clinical Examination		CPA	SGD / Clinical Rota	Clinical	X		
	Analyze & Interpret Cephalometric Analysis		CPA	Interactive Lecture / SGD / CBD				
	Analyze & Interpret OPG and PA Ceph		CPA	Interactive Lecture / SGD / CBD				
	Perform Cast Analysis	Dr Huma Kiyani	P	SGD / CBD				
	Apply Principles of Diagnosis & treatment Planning	Dr Saad Asad	P	SGD / CBD				
Management of Malocclusions	Discuss Class I Malocclusion- Crowding: Diagnosis, planning and treatment of the malocclusion	Dr Saad Asad	CPA	Interactive Lecture / CBD	22	X	Viva	X

	Discuss Class I Malocclusion- Spacing: Diagnosis, planning and treatment of the malocclusion	Dr Saad Asad	CPA	Interactive Lecture / CBD				
	Discuss Class I Malocclusion- Diatema: Diagnosis, planning and treatment of the malocclusio	Dr Saad Asad	CPA	Interactive Lecture / CBD				
	Discuss Class I Malocclusion- Bimaxillary Proclination: Diagnosis, planning and treatment of the malocclusion	Dr Huma Kiyani	CPA	Interactive Lecture / CBD				
	Discuss Class I Malocclusion- Cross Bite: Diagnosis, planning and treatment of the malocclusion	Dr Saad Asad	CPA	Interactive Lecture / CBD				
	Discuss Class I Malocclusion- Open Bite: Diagnosis, planning and treatment of the malocclusion	Dr Huma Kiyani	CP	Interactive Lecture / CBD				
	Discuss Class II Div 1 Malocclusion- Diagnosis, planning and treatment of the malocclusion	Dr Huma Kiyani	C	Interactive Lecture				
	Discuss Class II Div 2 Malocclusion- Diagnosis, planning and treatment of the malocclusion	Dr Huma Kiyani	C	Interactive Lecture				
	Signify role of Headgear in the manageent of Class II Malocclusion	Dr Saad Asad	C	DSL/ Assignment				
	Signify role of Functional Appliances in the manageent of Class II Malocclusion	Dr Saad Asad	C	Interactive Lecture				
	Discuss Class III Malocclusion- Diagnosis, planning and treatment of the malocclusion	Dr Huma Kiyani	C	Interactive Lecture				
	Signify role of Chin Cup in the manageent of Class III Malocclusion	Dr Saad Asad	C	DSL/ Assignment				
	Signify role of Face Mask in the manageent of Class III Malocclusion	Dr Saad Asad	C	DSL/ Assignment				

H) Protocols During Mixed Dentition: Time Allocation: Lectures: 05 hours

Space Management	Discuss: Space Menainence	Dr Huma Kiyani	C	Interactive Lecture	5	X	Viva	X
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	Discuss: Space Regaining		C	Interactive Lecture				
	Discuss: Space Supervision		C	Interactive Lecture				
	Signify Serial extract ion procedure		C	Interactive Lecture				
	Describe the diagnosis and management of habits.		C	Interactive Lecture				
I) Biomechanics: Time Allocation: Lectures / DSL: 05 hours								
Anchorage	Define anchorage and relate it with Newton's third Law of Motion	Prof. Dr Saad Asad	C	Interactive Lecture	3	X	viva	X
	Discuss different types of anchorage, preparation and assessment of anchorage planning.							
	Describe how to plan anchorage according to needs i.e. mild, moderate and maximum.		C	Interactive Lecture + Assignment				
	Methods to enhance anchorage value, Extra-oral and intra- oral methods i.e. headgear usage, chin cup, Nance, etc.							
Biology of Tooth movement & Biomechanis	Discuss the physiological changes of tissues at presure and tension ares during Orthodontic Tooth Movement	Dr Huma Kiyani	C	Interactive Lecture	2	X	Viva	X
	Describe pathophysiological change of tissue, at the pressure and tension area. When heavy forces are aploed							
	Describe the types of tooth movement and Optimal Forces to carry out Orthodontic tooth movements,		C	DSL				
	Relaty role of different analgesics during Tooth Movemnet.							
	Describe the ideal properties and comparison of different wires used in Orthodontics							
i) Orthodontic Applaincess: Time Allocation: Lectures : 9 hours								

Removable Appliances	Specify removable appliances.	Dr Khaliq Aman	C	Interactive Lecture	2	X	Viva	X
	Discuss the basic requirements of an orthodontic appliance and components of removable appliances.		C	Interactive Lecture				
	Describe general principles of designing and fabrication of removable appliances.		C	Interactive Lecture	Clinical	X	OSPE	
	Discuss the Scope of Removable Appliances and its difference from fixed appliances		CPA	SGD / Practical				
	Construction of Hawley retainers and Active Appliances (Z-Spring, LabialBow and Canine Retractor)							
	Selective case presentation and general wire bending exercise with discussion of the design and construction of different springs and clasps.							
	Trimming and polishing of removable appliances.							
	Insertion and advice for the patients.							
	Explain the follow-up and care during the treatment.							
	Discuss indications and contra indications of Functional Appliances		C	Interactive Lecture	5	X	Viva	X
	Discuss Twin Bloc) and describe their indications , contra indications and Biomechanics		C	Interactive Lecture				
	Discuss Activator and describe their indications , contra indications and Biomechanics		C	Interactive Lecture				
	Discuss Bionator and describe their indications , contra indications and Biomechanics		C	Interactive Lecture				
	Conceptualize Fixed Functional Appliances		C	DSL+ Assignment				

Fixed Appliances	Describe the principles of fixed appliances, identification of parts of fixed appliances and discussion of the fixed appliance system currently used.		C	Interactive Lecture				
	Discuss advantages and disadvantages of Fixed Appliances							
	Discuss 1 st , 2 nd and 3 rd order bends		C	Interactive Lecture				
	Discuss bracket positioning, direct bonding technique of mesh bracket, and adjustment of arch wire and follow up.							
	Describe the stages of treatment progression by fixed appliances.		C	Interactive Lecture				
	Conceptualize Clear Orthodontics							

J) Multi-Disciplinary Orthodontics: Time Allocation: Lectures / DSL: 14 hours

Cleft Lip & Palate	Describe the etiological factors.	Prof. Dr Saad Asad	C	Interactive Lecture	12	X	Viva	X
	Role of Orthodontist in the treatment procedures at different age groups.	Dr Saadia Noureen	C	Interactive Lecture				
	CLAP	Prof. Dr Saad Asad	CP	CBD				
Syndromes	Etiology, Diagnosis & Management of Common Syndromes	Dr Saadia Noureen	C	Interactive Lecture				
Orthognathic Surgery	Discussion of the indications of Orthognathic Surgery and stages of Orthognathic surgery	Dr Saadia Noureen	C	Interactive Lecture				
	Describe pre- surgical and post-surgical Orthodontics	Dr Saadia Noureen	C	Interactive Lecture				
Adjunctive orthodontic treatment	Discussion of adjunctive treatment goals and principles.	Dr Saadia Noureen	C	Interactive Lecture				
	Describe various adjunctive procedures.	Dr Saadia Noureen	C	Interactive Lecture				
Adult Orthodontics	Describe Adult Orthodontics, appliance and technique for Adult Orthodontics	Dr Saadia Noureen	C	Interactive Lecture				
TMD	Describe TMJ Dysfunction.	Prof. Dr Saad Asad	CP	DSL				
	Discussion of the types of TMPDS and the treatment modalities.	Prof. Dr Saad Asad	CP	DSL				

Ortho-perio-restorative interface	Pre-restorative Orthodontic procedures and preventive periodontics.	Dr Saadia Noureen	C	Interactive Lecture				
K) Retention and Relapse: Time Allocation: Lectures / DSL: 02 hours								
Retention and Relapse	Define retention and relapse.	Prof. Dr Saad Asad	C	Interactive Lecture	3	X	Viva	X
	Discuss different causes and factors of relapse.			Interactive Lecture				
	Discuss the Theorems of Retention and relapse.			Interactive Lecture				
	Describe different means of retention after correction of different types of malocclusions.			Interactive Lecture				
L) Oral radiology: Time Allocation: Lectures / DSL: 02 hours								
Oral Radiology	Indications and uses of dental radiography.	Dr Saadia Noureen	C	Interactive Lecture	2	X	Viva	X
	Interpretati on of radiographic films.							
	Discussion of the radiation hazards.							
	CBCT	Prof. Dr Saad Asad	CP	DSL				
	MRI							

**SMALL GROUP DISCUSSION, ORTHODONTICS PRACTICALS
AND CLINICAL COMPONENT**

Sr. No	Objectives	Faculty	Time Allocation / Batch
1	History and Clinical Examination: <ul style="list-style-type: none"> • Clinical evaluation of the patient • Impression Taking • Bite Registration 	Dr. Saad Asad	20 hours
2	Study model analysis: <ul style="list-style-type: none"> • Cast Analysis • ALD • Bolton Analysis • Mixed Dentition Analysis 	Dr. Huma Kiyani	40 hours
3	Wire Bending Exercise: <ul style="list-style-type: none"> • Construction of Adam's Crib • Construction of Labial-Bow • Construction of Palatal Finger Spring • Construction of "Z" Spring • Construction of Buccal Canine Retractor 	Dr. Khaliq Aman	40 hours
4	Construction of Hawley's Retainer	Dr. Khaliq Aman	40 hours
5	Cephalometric analysis: <ul style="list-style-type: none"> • <u>Sagittal Analysis:</u> <SNA, <SNB, <ANB, AO-BO Distance, Anterior Cranial Base Length & Mandibular Corpus Length. • <u>Vertical Analysis:</u> <SN Mandibular Plane, <MMA, <Y axis, Sum of Posterior Angles & Posterior Face 	Prof . Dr Saad Asad & Dr Saadia Naureen	40 hours

	<p>Height: Anterior Face Height.</p> <ul style="list-style-type: none"> • <u>Dental Analysis:</u> <UI-SN, <UI-PP, <IMPA, < IIA & Hold away Ratio. • <u>Soft Tissue Analysis:</u> Distance of Upper Lip to E Line and S Line, Distance of Lower Lip to E Line and S Line & <Nasolabial 		
6	Observation of Fixed Appliances Cases	All	20 hours

Learning resources

S.#	Topics	Recommended books
1.	Indication & contraindication of orthodontic treatment	An introduction to orthodontics by Laura Mitchell
2.	Management of the Developing dentition	
3.	Craniofacial growth and the cellular basis of tooth movement	
4.	Cephalometrics	
5.	Treatment Planning	
6.	Treatment of Class I malocclusion	
7.	Treatment of Class II div I malocclusion	
8.	Treatment Of Class II Div 2 malocclusion	
9.	Treatment of Class III malocclusion	
10.	Deep bite malocclusion	
11.	Open bite malocclusion	
12.	Cross bite malocclusion	
13.	Canines	
14.	Anchorage Planning	
15.	Retention And relapse	
16.	Removable appliances	
17.	Fixed appliances	
18.	Functional appliances	
19.	Adult orthodontics	
20.	Orthodontics Aligners	
21.	Orthognathic surgery	
22.	Cleft lip and palate	
23.	Orthodontics First Aid	
24.	The aetiology and classification of malocclusion (Ch-05)	Contemporary orthodontics (Proffit)
25.	Orthodontics assessment (Ch-06)	

OTHER LEARNING RESOURCES

<u>Hands- on Activities / Practical</u>	Students will be involved in Practical sessions and hands-on activities that link with the module to enhance the learning.
<u>Labs</u>	Utilize the lab provides the simulated learning to the specimens and models available.
<u>Skills Lab</u>	A skills lab provides the simulated learning experience to learn the basic skills and procedures.
<u>Videos</u>	Video familiarize the student with the procedures and protocols to assist patients.
<u>Computer Lab/CSs/DVDs/ Internet Resources</u>	To increase the knowledge, students should utilize the available internet resources and CDs/ DVDs. This will be an additional advantage to increase learning.
<u>Self-Learning</u>	Self-Learning is scheduled to search for information to solve cases, read through different resources and discuss among the peers and with the faculty to clarify the concepts.

Assessment

Summative assessment methods and policies

Internal Assessment

- a. Weightage of internal assessment shall be 20 %, each for theory and practical, in BDS Professional Examination.
- b. The Internal Assessment shall comprise of monthly test/ CBL/assignments/ Clinical tests /Clinical viva`s, etc.
- c. The Internal Assessment record shall be kept in the respective department of the College/and shall be furnished to the Controller of Examinations
- d. The result of all the class tests/tools which contribute towards IA will be displayed to the students during an academic year.
- e. The same internal assessment shall be counted both for annual and supplementary examinations. The students who are relegated, however, can improve the internal assessment during subsequent year

Annual Examination

- a. The weightage of Annual Examination shall be 80%, each for theory and practical, in BDS.
- b. The examination comprises of a theory paper and practical/clinical examinations as per PM&DC regulations and the Table of Specifications (TOS) of the University.
- c. The Theory Paper shall have 80 MCQs in total (01 each Mark)
- d. Each MCQs shall have four distractors

Internal Examiner

He/she shall be Professor and Head of Department who has been involved in teaching of the class being examined. Second preference shall be Associate/Assistant Professor who is involved in teaching of the class and posted there for one year.

External Examiner

He/she shall be a Professor/Associate/ Assistant Professor of a recognized Dental College

Conflict of Interest

No person shall serve as an examiner whose close relative (wife, husband, son, daughter, adopted son, adopted daughter, grand-son, grand-daughter, brother, sister, niece/nephew, son and daughter-in-law brother and sister- in-law, parental and maternal uncle and aunt etc) is appearing in the examination. All examiners likely to serve as an examiner shall render a certificate in compliance to this para.

Paper Setting

The Controller of Examinations SZAMBU shall approve the faculty for the final paper setting having fair representation of each college / institute.

Paper Assessment

- a. The Controller of Examinations shall approve the faculty for the theory paper marking, to be undertaken in the manner as deemed appropriate.
- b. The Examination Directorate shall coordinate directly with the faculty, earmarked for the paper marking

Practical / Clinical Examinations

- a. The Controller of Examiners shall approve the faculty to serve as the internal & external examiners.
- b. One external & internal examiner each shall be marked for a group of 50 students.
- c. Candidates may be divided into groups in the clinical and practical examinations and be standardized by incorporating clinical exam
- d. Practical/clinical examination shall be held after the theory examination of the subject
For the purpose of practical/clinical examination, the candidates may be divided into sub groups by the examiners.
- e. The assessment of the practical / clinical examination duly signed by internal & external examiner shall be furnished to the Controller of Examinations

Pass Marks

- a. Pass marks for all subjects less Islamic / Pakistan Studies, shall be 50 % in theory and practical,
- b. No grace marks shall be allowed to any student in any examination.

Declaration of Result

Every effort shall be made to declare the result of each examination within one month of the last practical examination or earlier.

Promotion.

No student shall be promoted to the higher classes unless he/she passes all the subjects of the previous class

Re-Totaling.

Any student may apply to the Controller of Examinations on a prescribed form along with the specified fee.

Supplementary Examination.

The interval between a supplementary examination and the previous professional examination shall not be more than two months. There shall be no special supplementary examination.

Table of specification for Annual Professional Exam:
Theory

Sr. No	Topic	No of MCQs (30) (01 marks each)
1	Introduction to the Orthodontics	02
2	Development of Dentition & Occlusion	05
3	Growth and Development	08
4	Occlusion and Malocclusion	07
5	Diagnosis and Treatment Planning	24
6	Protocols during mixed dentition	05
7	Orthodontic appliances and biomechanics	12
8	Multi-disciplinary Orthodontics	12
9	Retention Protocol	03
10	Oral Radiology	02
Total		80 (80 marks)

Levels

MCOs

C1

10

C2

25

C3

45

Table of specifications for Annual Professional Exam: Practical

VIVA		Practical / Clinical		Total
Examiner 1	Examiner 2	Mincex (2)	OSCE (10)	80 Marks
10 Marks	10 Marks	10 Marks	50	

Internal Assessment Calculation (Theory)

A	B	C	D	E
Class Tests	1 st & 2 nd Term Exams	Sendup Exam	A+B+C=Total	Total Marks of internal assessment out of 20
				(E) =marks obtained x 20/100
20 marks	30 marks	50 Marks	100 Marks	Marks

Internal assessment calculation (Practical)

A	B	C	D	E	F
Assignment	Ward Assessment	End of rotation Assessment	Log Book	Pre-annual (Practical)	Total Marks of internal assessment out of 20
					(F) =marks obtained x 20/100
20 Marks	20 Marks	15 Marks	15 Marks	30 Marks	Marks

Sample MCQs

Multiple Choice Questions (MCQs)

- A multiple choice question (MCQ) consist of a stem that states the question or problem followed by a set of possible answers that contain an option that is best answer to the question.
- After reading the questions students should select the appropriate option from the given possible answers.
- The correct answer carries one mark and incorrect carries zero. There is no negative marking.

Sample MCQ

The mother of an eleven years old girl came to your OPD with the complaint that her daughter is constantly teased at school because of her prominent teeth and short chin. On clinical examination you find that she has a Class II division 1 malocclusion. Her Cephalometrics confirms it to be skeletal Class II due to short mandible. Considering that presently, she is in the growing age which appliance will be given to her to manage her concerns?

- a) Twin Block appliance
- b) Facemask appliance
- c) Headgear appliance
- d) Chin cup appliance

Key: a