



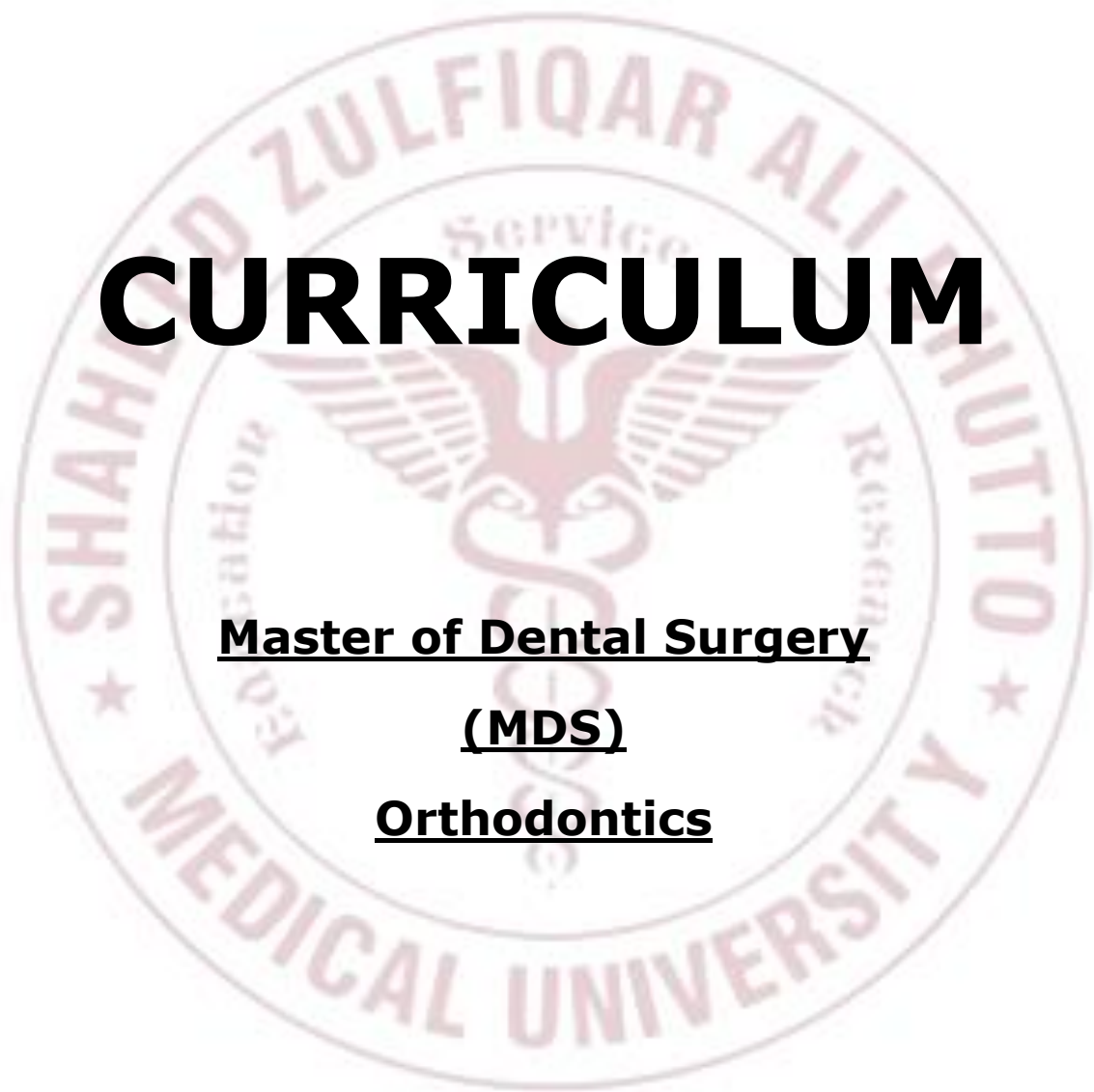
## **ORTHODOCTICS**

**Residency Training Program  
Leading to the degree of**

**Master of Dental Surgery (MDS)**

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**SHAHEED ZULFIQAR ALI BHUTTO MEDICAL UNIVERSITY  
ISLAMABAD**



# **CURRICULUM**

**Master of Dental Surgery**

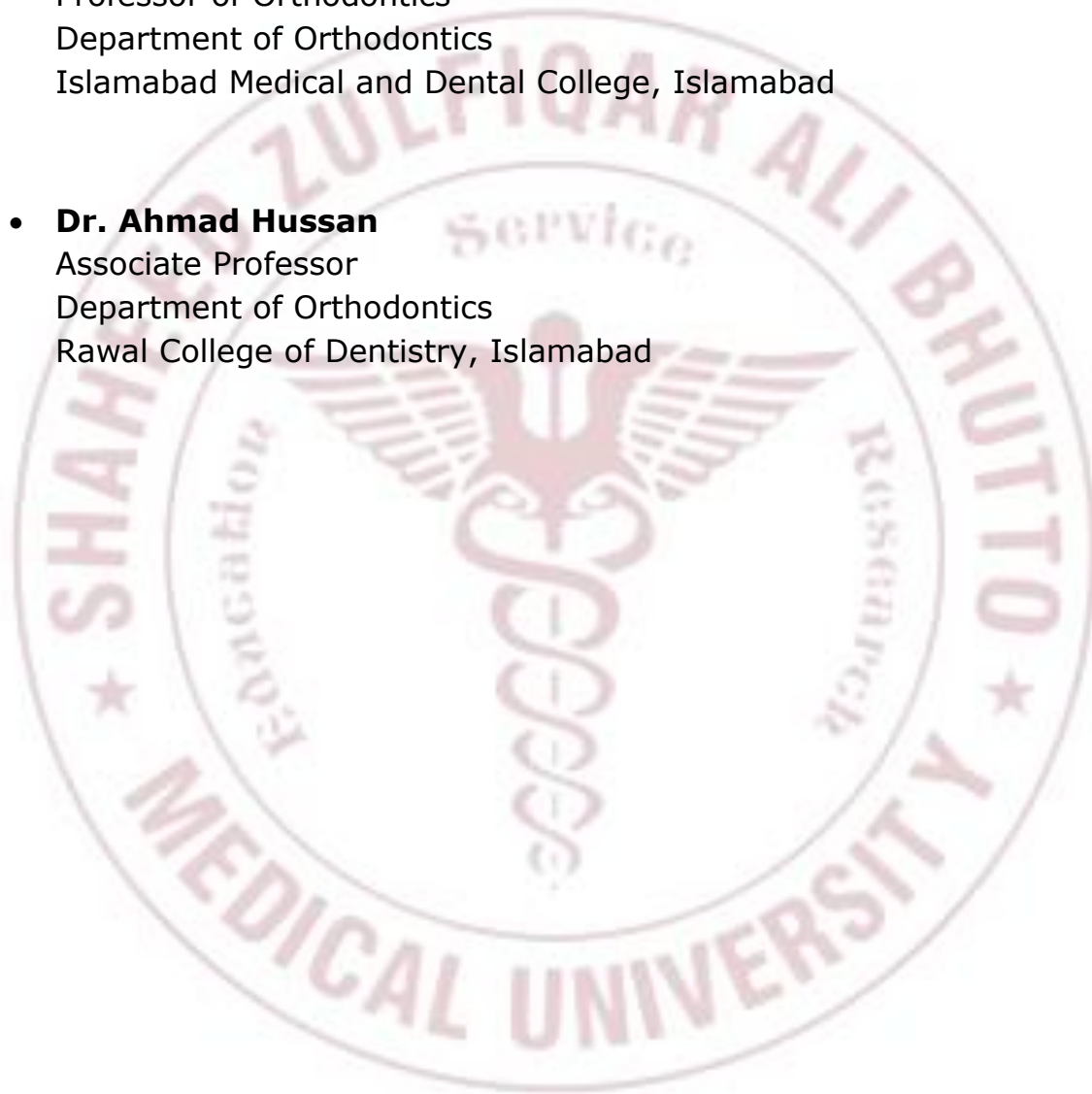
**(MDS)**

**Orthodontics**

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## **ROAD MAP OF MDS ORTHODONDICS** **(A Brief Summary)**

### **GENERAL INFORMATION AND PROGRAM GOALS:**

MDS Orthodontics will offer a 48-month training program. The program intends to model a training atmosphere with both academic and clinics. The curriculum is centered on daily clinical seminars and instruction with each individual class.

The goal of this program is to teach a variety of treatment mechanics that are scientifically valid, and let the residents make evidence based treatment plans on a case by case basis. The curriculum focuses on didactic, clinical skills and research abilities so as to prepare graduates at par with international standards.

### **COURSE DESCRIPTION:**

A total of one hundred and twenty-eight (128) credit hours of instruction and supervised activities are distributed over four years' academic period. This comprises approximately 1152 contact hours of direct instruction and approximately 6672 scheduled hours including formal didactic, clinical, research and laboratory experience.

(1 credit hour will be equal to 9 hours of direct contact)

<b>FIRST YEAR MDS</b>		
<b>Core Courses</b>	<b>Course title</b>	<b>Credit hours</b>
1.	Anatomy, Physiology, Psychology, Pain	1
2.	Advanced Oral Pathology	2
3.	Introduction to statistical inference	1
4.	Introduction to research	1
5.	Multidisciplinary differential diagnosis	1.5
6.	Dental therapeutics	0.5
7.	Principles of practice management	0.5
8.	Occlusion	1
9.	Advanced Oral medicine	0.5

10.	Sterilization	0.5
11.	Radiology	1
12.	Basics of Microsoft office	1
13.	CPC Presentation	0.5
14.	Literature review 1	1
15.	Communication skills	1
		<b>14</b>
<b>Specialty Courses</b>		
16.	Diagnostics	5
17.	Orthodontic materials	1
18.	Orthodontic technique	1
19.	Basic wire bending principles and biomechanics	1
20.	Growth and development	1
21.	Case presentation	5
22.	Journal club	3
23.	General topics presentation	2
24.	Clinics and laboratory work	5
25.		<b>24</b>
<b>SECOND YEAR MDS</b>		
26.	Orthodontic diagnosis 2	2
27.	Clinics and laboratory work	5
28.	Journal club	3
29.	Research	6
30.	Biomechanics 2	2
31.	Dentofacial orthopedics	1
32.	Early orthodontic treatment	1
33.	Surgical orthodontics 1	1
34.	Speech problems	1
35.	Air way	1
36.	Case presentation	5
37.	Impacted teeth	1
38.	TAD's	1
		<b>30</b>
<b>Examination</b>		
MTA		
<b>THIRD YEAR MDS (Graduate assistantship)</b>		
39.	Clinics	5
40.	Journal club	3
41.	Orthodontic teaching	4
42.	Orthodontic mechanics 3	2
43.	Orthodontic diagnosis 3	2
44.	Lingual orthodontics	2

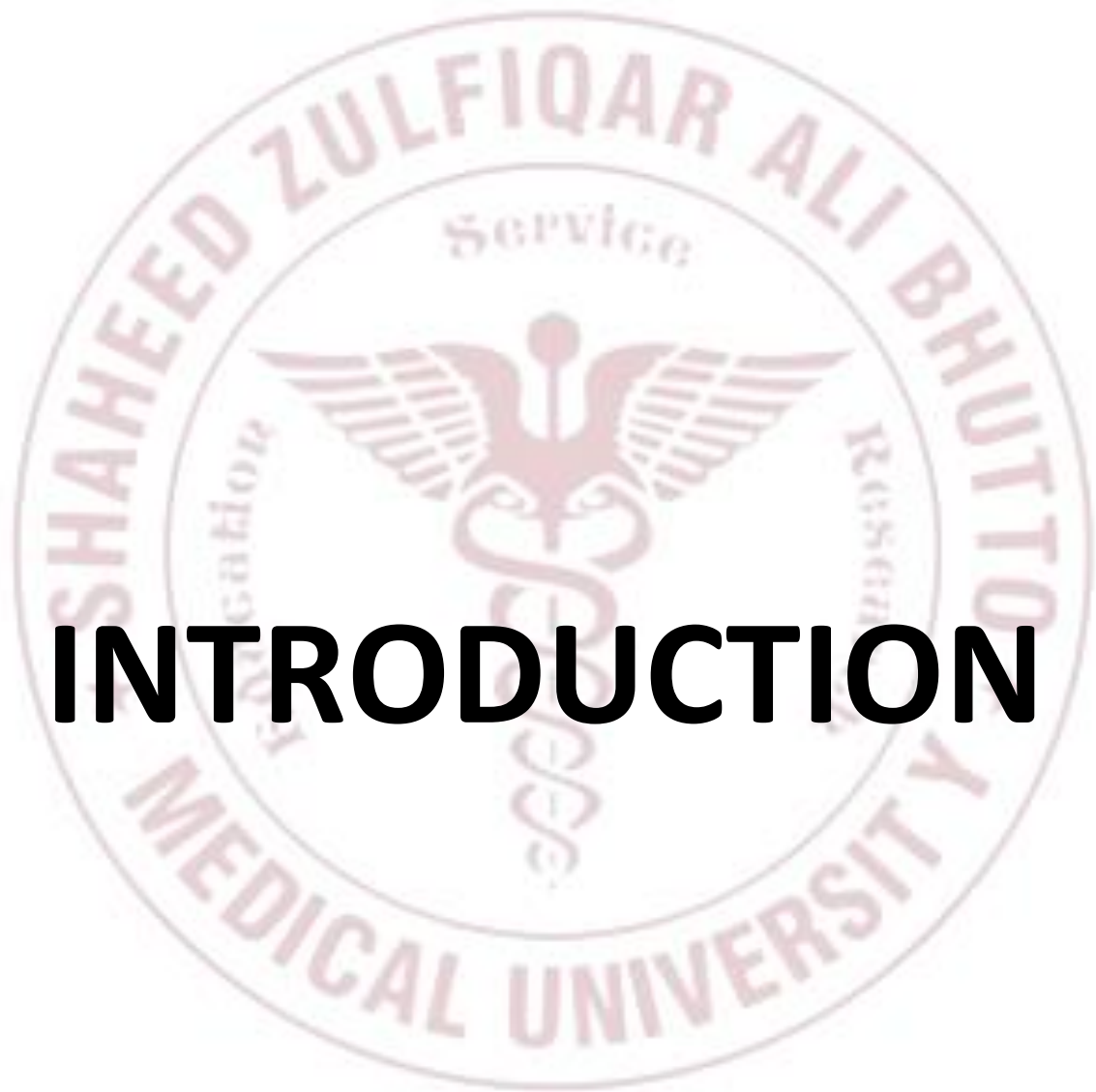
45.	TMJ management 1	2
46.	Surgical orthodontics 2	2
47.	Craniofacial anomalies	2
48.	Research	6
		<b>30</b>
<b>FOURTHS YEAR MDS (Graduate assistantship)</b>		
49.	Clinics	5
50.	Journal club	3
51.	Orthodontic teaching	4
52.	Orthodontic mechanics 4	1
53.	Orthodontic diagnosis 4	1
54.	TMJ management 1	1
55.	Research	15
		<b>30</b>
<b>TOTAL = 128</b>		
<b>Exit Examination</b>		

## Requirements of MDS Degree for Graduate Students Enrolled in the Program

- Fulfillment of University requirements for postgraduate study.
- Four (4) years of consecutive full time advanced study and clinical training.
- Complete and approved master's thesis based on original research during the course of study in an area related to specialty, suitable for publication in a reputable dental journal.
- Must complete all didactic & clinical work in the required curriculum and satisfactorily pass all the University examinations.
- A minimum of 60% must be earned in all work/examinations attempted in the master's program. A grade below this will require re-examination.

A complete road map for postgraduate MS/MD/MDS can be seen on University website at <http://www.szabmu.edu.pk/content/downloads/road-map-for-postgraduate-residents.pdf>





# INTRODUCTION

## INTRODUCTION

The program is set out, in accordance with modern educational practice, in a modular format to assist teaching and assessment, to reflect a constructivist perspective, based on the SPICES model, which is indicative of the competencies required at the varying levels of training within the specialty together with the knowledge, skills and attitudes achieved by the trainee in acquiring those competencies. The training has been based on current thinking and the requirements for:

- Greater protection of the public by providing clear information as to the level of training achieved
- Improved access to specialty training to general practitioners
- Greater flexibility of training through the availability of multiple instructors
- Producing a competent workforce with the appropriate skills and knowledge necessary to meet the varying levels of treatment complexity, as well as considering the relative need and demand of potential patients.



# **RATIONALE**

## **RATIONALE:**

### **Need of program**

This training program is structured keeping in view the need of the society. Following needs are identified through formal and informal discussion with the stakeholders.

- Deficiency of the quality health care providers to public especially in remote areas.
- Dearth deficiency of competent faculty in the field.
- Deficiency of state of the art orthodontics training center.

### **Purpose of training**

In developing the program, the requirements to both protect the public and to train a competent workforce with the appropriate skills and knowledge is necessary to meet the varying levels of treatment complexity, as well as considering the relative need and demand of potential patients. The majority of patients in the current population of Pakistan have a treatment complexity that can be managed by a Specialist Orthodontist. The purpose of the 4-year program is to enable trainees in Orthodontics to achieve the level of competence expected in order to provide appropriate treatment care.

It is essential that the public have a clear understanding as to the level of training undertaken by a trainee and that the 'specialist' has the appropriate knowledge and skills to provide care for the needs of a specific patient group. It is expected that 'specialists' providing such care would currently undertake an extended, additional period of training that equips them to deliver more complex maxillo-facial orthodontic and orthopedic treatments and associated services.<sup>1</sup>

The program includes all the features of the European Erasmus training program<sup>2</sup> and fulfils the requirements of the directives of the Commission of the European Communities on Dental Education regarding the education of orthodontists, the Advisory Committee on the training of Dental Practitioners and the World Federation of Orthodontists guidelines for postgraduate orthodontic education.

The training program is founded on a training center, comprising a Dental College (IM&DC) and Dental Hospital (Islamabad Dental Hospital) together with other associated, recognized and validated training environments.

Completion of the 4 years' specialist training program is marked by the successful completion of standard competencies, subject to the satisfactory completion of the in-training assessments.

### **Context of Training**

Training and education should be systematically planned in both the clinical and academic environments. The educational contract should be structured and, in this context, training should take precedence over service provision. Dental Hospital can provide complete training and hospital departments are normally expected to inter-link, primary care settings and other training environments to provide all aspects of teaching and training as appropriate. Educational plans should be coordinated so that the opportunities available in approved training environments can be linked to form an orthodontic training network. Training has been planned in modules linked to various generic and specialty specific topics.

In preparation for specialists undertaking and maintaining a modern evidence-based approach to orthodontic practice, achieved through continuing professional and personal development, it is expected that trainees have personal research training and experience.



## **Duration of training**

The program leading to MDS in Orthodontics will be of 04 years' full time.





## **AIMS & OBJECTIVES**

# **AIMS & OBJECTIVES**

## **Aims of Training**

The trainee should acquire the appropriate knowledge, attitudes and skills of a Specialist Orthodontist. Trainees should possess a sense of professionalism, interest and enquiry. These characteristics should encourage the specialist to maintain competency throughout their career by the continuous pursuit of Continuing Professional Development.

## **Learning Objectives**

On completion of training the graduate will demonstrate the following aptitudes.

### **Generic Specialist Skills**

- A professional and ethical approach to patient care.
- A professional attitude to all members of the dental team.
- A scientific attitude, an inquiring mind and the stimulation of professional curiosity.
- A thorough understanding of scientific methodology.
- An ability to interpret the relevant literature.
- An awareness of current legislation and working practices relating to the practice of dentistry. An ability to develop themselves by both reflective practice and self-evaluation.

### **Orthodontic Specific Specialist Skills:**

- Diagnose anomalies of the dentition.

- Detect deviations in the development of the dentition, of facial growth and the possession of functional abnormalities· Evaluate the need for orthodontic treatment.
- Formulate a treatment plan and predict its course.
- Carry out interceptive orthodontic measures.
- Execute simple and complex treatment procedures.
- Evaluate orthodontic progress and treatment outcomes.

### **Generic Knowledge, Skills and Attitudes**

- Module 1 - Cell and Molecular Biology with Genetics
- Module 2 - Embryology, growth and development of the face and jaws
- Module 3 - Radiological Imaging Techniques

### **Orthodontic Specialist Specific Knowledge, Skills and Attitudes**

- Module 4 - Normal and Abnormal Development of the Dentition
- Module 5 - Tooth Movement and Facial Orthopedics
- Module 6 - Orthodontic Materials and Biomechanics
- Module 7 - Aetiology of Malocclusion
- Module 8 - Diagnostic Procedures
- Module 9 - Treatment Planning
- Module 10 – Orthodontic (Removable, Functional, Extra-Oral, Fixed, Retention) Appliances

**Learning outcomes or objectives help learners to learn because they define what the learner has to do. Therefore, an attempt has been made that the outcomes be explicit and clearly linked to delivery and assessment**



# **ENTRY CRITERIA**



## **ENTRY CRITERIA:**

### **Eligibility to apply for MDS Orthodontics**

- Candidate must possess BDS or equivalent degree and one year house job from PMDC recognized Institutions.
- Permanent valid registration with PM&DC.
- Declared successful in MDS Part-I for University programs.
- In case of foreign candidate, valid registration with Medical Council of their country of origin must be produced.

### **Required Documents**

Attested photo copies of the following documents must be attached with application form:

- Computerized National Identity Card (CNIC)
- Domicile certificate
- Matric/O Level, FSc/A Level, Certificates or equivalent
- BDS degree with detail marks certificates of all professional
- BDS Attempts certificates of all professional
- NEB pass certificate (for foreign graduates)
- House Job certificates
- PMDC valid permanent registration certificate
- MDS Part-I passing certificate
- Experience Certificates (if any)
- Migration Certificate (To be produced at the time of admission)

### **Admission Procedure**

- Details of admission procedure is available on university website at <http://www.szabmu.edu.pk/admission/postgraduate-admission>



## **CONTENT OF LEARNING:**

## CONTENT OF LEARNING:

The program outline addresses both the knowledge needed in Orthodontics and allied medical specialties in its scope. A minimum of four years of formal training through a graded system of education as specified will equip the trainee with knowledge, skill and attitude at its completion to be able to practice basic orthodontics competently.

The topics are considered as under: -

### Module 1- Cell and molecular biology

Objective	Learning outcomes	Teaching & Learning Methods	Assessment
This module is intended to provide information regarding: · Cells and molecules as they relate to the development and growth of the craniofacial complex, and their relevance to the assessment and treatment of patients	The learner should be able to: <ul style="list-style-type: none"><li>• Describe bone formation and remodeling in health and disease.</li><li>• Describe both normal and abnormal development of teeth and surrounding structures.</li><li>• Apply knowledge of craniofacial biology to the assessment and treatment of patients.</li><li>• Recognize the importance of cell biology for normal and abnormal craniofacial development.</li></ul>	<ul style="list-style-type: none"><li>• Attend trainee seminars within department</li><li>• Web based e-learning sources</li><li>• Independent study</li><li>• Attendance at suitable course</li><li>• Attendance at suitable meetings</li></ul>	<ul style="list-style-type: none"><li>• Written examination</li><li>• Structured Clinical Reasoning (SCR)</li></ul>

**Module 2- Embryology, growth and development of the face and jaws**

Objective	Learning outcomes	Teaching & Learning Methods	Assessment
<p>This module is intended to provide information regarding: Growth and development of structures of the head and neck, and their relevance to the assessment and treatment of patients</p>	<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• Describe normal and abnormal facial development including common malformations.</li> <li>• Apply knowledge of facial embryology, growth and development to the assessment and treatment of patients.</li> <li>• Recognize importance of developmental biology for normal and abnormal facial formation.</li> <li>• Recognize the importance of patterns of facial growth in relation to patient assessment and treatment.</li> </ul>	<ul style="list-style-type: none"> <li>• Attend trainee lectures / seminars within the department</li> <li>• Independent study</li> <li>• Attendance at suitable Course (Workshops &amp; lectures)</li> <li>• Attendance at suitable meetings (Workshops &amp; lectures)</li> <li>• Web based e-learning sources</li> </ul>	<ul style="list-style-type: none"> <li>• Written examination (SEQ)</li> <li>• Structured Clinical Examination (OSCE)</li> </ul>

### Module 3- Radiological Imaging Techniques

Objective	Learning outcomes	Teaching & Learning Methods	Assessment
<p>This module is intended to provide information about and experience in:</p> <ul style="list-style-type: none"> <li>Principles and practice of imaging and the relevant imaging technology</li> </ul>	<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>Explain the operation of contemporaneous imaging equipment within legislation.</li> <li>Describe radiation protection and ALARA guidelines.</li> <li>Apply knowledge of imaging techniques to the diagnosis and management of orthodontic patients.</li> <li>Recognize the importance and appropriate use of imaging for the benefit of the patient.</li> <li>Exhibit an awareness of the legal basis of protecting the patient and staff.</li> </ul>	<ul style="list-style-type: none"> <li>Attend trainee seminars / tutorials</li> <li>Attendance at suitable course</li> <li>Independent study</li> <li>Web based e-learning sources</li> </ul>	<ul style="list-style-type: none"> <li>Case presentations</li> <li>OSCE</li> </ul>



#### Module 4- Normal and Abnormal Development of the Dentition

Objective	Learning outcomes	Teaching & Learning Methods	Assessment
<p>This module is intended to provide information about and experience in:</p> <ul style="list-style-type: none"> <li>• The development of normal occlusion from birth to adulthood</li> <li>• The effect of genetic and environmental influences on the development of the dentition</li> </ul>	<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• Describe both normal and abnormal dental development.</li> <li>• Identify the developmental stage of the dentition.</li> <li>• Describe factors responsible for developmental abnormalities.</li> <li>• Demonstrate an assessment of the dentition, craniofacial skeleton and soft tissues.</li> <li>• Perform the taking, analysis and interpretation of the current imaging techniques utilized in orthodontic practice.</li> <li>• Recognize the importance of basic head and neck biology for an understanding of the delivery of orthodontic health care.</li> <li>• Recognize the use of appropriate scientific terminology in the explanation of dental /developmental problems and treatment to patients /parents.</li> </ul>	<ul style="list-style-type: none"> <li>• Attend trainee seminars/ lectures/ tutorials</li> <li>• Independent study</li> <li>• Web based e-learning sources</li> <li>• Attendance at suitable course (Workshops &amp; lectures)</li> <li>• Attendance at suitable meetings (Workshops &amp; lectures)</li> </ul>	<ul style="list-style-type: none"> <li>• Written examination and/or viva</li> <li>• (SCR)</li> </ul>

### Module 5- Tooth Movement and Facial Orthopaedics

Objective	Learning outcomes	Teaching & Learning Methods	Assessment
<p>This module is intended to provide information about and experience in:</p> <ul style="list-style-type: none"> <li>• Exfoliation and eruption of the dentition</li> <li>• Biology of tooth movement</li> <li>• Resorption of dental structures</li> </ul>	<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• Describe normal exfoliation and eruption of teeth.</li> <li>• Describe the histology of tooth movement.</li> <li>• Describe the resorption of dental structures.</li> <li>• Apply histology and biochemical knowledge to normal loss of teeth, eruption and growth of teeth.</li> <li>• Recognize the importance of such processes during orthodontic tooth movement.</li> <li>• Recognize the need for the explanation of treatment options including the risks of treatment.</li> </ul>	<ul style="list-style-type: none"> <li>• Attend trainee lectures / seminars / tutorials</li> <li>• Independent study</li> <li>• Web based eLearning sources</li> <li>• Attendance at suitable course (Workshops &amp; lectures)</li> <li>• Attendance at suitable meetings (Workshops &amp; Lectures)</li> </ul>	<ul style="list-style-type: none"> <li>• Written exam and/or viva (SCR)</li> <li>• OSCE</li> </ul>

**Module 6- Orthodontic Materials and Biomechanics**

Objective	Learning outcomes	Teaching & Learning Methods	Assessment
<p>This module is intended to provide information about and experience in:</p> <ul style="list-style-type: none"> <li>• The types of materials available and their properties</li> <li>• The interaction of orthodontic brackets and wires and the tooth movements achieved</li> </ul>	<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• Describe the range of materials used in orthodontics.</li> <li>• Explain archwire sequences and their justification.</li> <li>• Describe the way in which archwires achieve their tooth movements.</li> <li>• Outline variations of biomechanics.</li> <li>• Select appropriate materials required for the clinical situation.</li> <li>• Apply appropriate materials to achieve specific tooth movements and the way to achieve these.</li> <li>• Analyze and accounts for desired and undesired tooth movements.</li> <li>• Recognize the importance of normal archwire sequences.</li> <li>• Recognize the appropriate pace of treatment progress.</li> <li>• Recognize the need for the explanation of treatment progress.</li> <li>• Recognize the importance of iatrogenic effects of orthodontics.</li> </ul>	<ul style="list-style-type: none"> <li>• Attend trainee seminars / lectures / tutorials</li> <li>• Practical typodont courses</li> <li>• Independent study</li> <li>• Web based elearning sources</li> <li>• Clinical treatment of patients</li> <li>• Attendance at suitable courses (Workshops &amp; lectures)</li> </ul>	<ul style="list-style-type: none"> <li>• Workplace based assessments</li> <li>• Written exam and/or viva (SCR)</li> <li>• OSCE</li> <li>• Clinical exam (presentation of treated cases)</li> <li>• DOPS</li> </ul>

## Module 7- Aetiology of Malocclusion

Objective	Learning outcomes	Teaching & Learning Methods	Assessment
<p>This module is intended to provide information about and experience in:</p> <ul style="list-style-type: none"> <li>• Skeletal factor aetiology</li> <li>• Soft tissue factor aetiology</li> <li>• Local/dental factor aetiology</li> </ul>	<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• Identify specific causes of malocclusion.</li> <li>• Outline genetic influences.</li> <li>• Describe environmental influences.</li> <li>• Analyse and interprets clinical findings with respect to the diagnosis of the malocclusion.</li> <li>• Design suitable treatment plans taking into consideration the cause of the malocclusion.</li> <li>• Recognize the importance of aetiology with respect to the development of the malocclusion.</li> <li>• Recognize the role of aetiology in the formulation of the treatment plan.</li> </ul>	<ul style="list-style-type: none"> <li>• Attend trainee lectures / seminars</li> <li>• Independent study</li> <li>• Web based elearning sources</li> <li>• Attendance at suitable courses (Workshops &amp; lectures)</li> <li>• Attendance at suitable clinics and provision of patient treatment (Observation)</li> </ul>	<ul style="list-style-type: none"> <li>• Workplace based assessments</li> <li>• Written exam and/or viva</li> <li>• (SCR)</li> <li>• OSCE</li> <li>• DOPS</li> </ul>

**Module 8- Diagnostic Procedures**

Objective	Learning outcomes	Teaching & Learning Methods	Assessment
<p>This module is intended to provide information about and experience in:</p> <ul style="list-style-type: none"> <li>• Clinical assessment</li> <li>• Radiographic assessment</li> <li>• Study model analysis</li> <li>• Other special tests</li> </ul>	<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• Describe the clinical assessment and diagnosis of malocclusion.</li> <li>• Collect, interpret and analyses clinical records pertinent to clinical diagnosis.</li> <li>• Recognize the importance of systematic and thorough diagnosis.</li> <li>• Recognize the need for the explanation of patient malocclusion.</li> </ul>	<ul style="list-style-type: none"> <li>• Clinical demonstrations</li> <li>• Attend trainee seminars</li> <li>• Independent study</li> <li>• Web based e-learning sources</li> <li>• Attendance at suitable Courses (Workshops)</li> <li>• Attendance at suitable clinics and provision of patient treatment (Observation)</li> </ul>	<ul style="list-style-type: none"> <li>• Workplace based assessments</li> <li>• OSCE</li> <li>• DOPS</li> </ul>



## Module 9- Treatment Planning

Objective	Learning outcomes	Teaching & Learning Methods	Assessment
<p>This module is intended to provide information about and experience in:</p> <ul style="list-style-type: none"> <li>• Identification of patient concerns</li> <li>• Identification of treatment aims</li> <li>• Identification of the type of treatment necessary to achieve those aims</li> </ul>	<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• Identify patients' expectations.</li> <li>• Explain information to patients relevant to the delivery of treatment.</li> <li>• Describe the way in which the treatment delivers the objectives.</li> <li>• Evaluate information required for treatment planning.</li> <li>• Evaluate all possible treatment options including the provision of no treatment.</li> <li>• Recognize the importance of whether or not malocclusion can be corrected successfully.</li> <li>• Recognize the need for considering the patient factors that may modify treatment.</li> </ul>	<ul style="list-style-type: none"> <li>• Attend trainee case seminars / case conferences</li> <li>• Independent study</li> <li>• Attendance at suitable courses</li> <li>• Attendance at suitable clinics and provision of patient treatment (Observation)</li> <li>• Attendance at suitable Meetings (Workshops &amp; lectures)</li> </ul>	<ul style="list-style-type: none"> <li>• Workplace based assessment</li> <li>• MiniCEX</li> <li>• DOPS</li> </ul>

## Module 10- Orthodontic Appliances

Objective	Learning outcomes	Teaching & Learning Methods	Assessment
<p>This module is intended to provide information about and experience in:</p> <ul style="list-style-type: none"> <li>• The scope and limitations of orthodontic appliances</li> <li>• Indications and contraindications for their use</li> <li>• The placement, bonding and cementation of fixed orthodontic appliances</li> <li>• Anchorage planning and control in fixed orthodontic appliance therapy</li> </ul>	<p>The learner should be able to:</p> <ul style="list-style-type: none"> <li>• State the design, manufacture and construction of orthodontic appliances.</li> <li>• Describe the various types of orthodontic appliances.</li> <li>• Describe intra-oral auxiliaries, temporary anchorage devices and expansion appliances.</li> <li>• Select, fits and manages fixed appliance systems appropriate to the treatment of specific malocclusions.</li> <li>• Interpret the literature with regard to bracket system choice.</li> <li>• Recognize the appropriateness of fixed appliances for the treatment of specific malocclusions.</li> </ul>	<ul style="list-style-type: none"> <li>• Attend typodont courses</li> <li>• Attend trainee seminars / tutorials</li> <li>• Independent study</li> <li>• Attendance at suitable courses (Workshops &amp; lectures)</li> <li>• Attendance at suitable clinics and provision of patient treatment (Observation)</li> </ul>	<ul style="list-style-type: none"> <li>• Workplace based assessments</li> <li>• DOPS</li> <li>• Presentation of treated cases</li> </ul>

## Research

The resident would be required to undertake a research project and to present the result for examination in the form of a thesis. They would be encouraged to present and publish the result of the project in refereed journals.

The guideline for synopsis and thesis writing is available on University website at

<http://www.szabmu.edu.pk/content/downloads/guidelines-for-synopsis-writing.pdf>

<http://www.szabmu.edu.pk/content/downloads/guidelines-for-thesis-writing.pdf>





## **ASSESSMENT**

Assessment of trainees will cover the cognitive, psychomotor and affective domains. It will take two forms

- Formative Assessment
- Summative Assessment

### **Formative Assessment**

It is the continuous assessment of progress and competence. It will be conducted through workplace based assessment throughout the training. Assessment will be undertaken by a range of assessors and will cover a range of procedures appropriate to the stage of training. Formative assessment will include

- Directly observed practical skills (DOPS)
- Case based discussion (CbD)
- Mini clinical examination exercises (Mini-CEX)
- Multiple source feedback (MSF)

### **Summative Assessment**

Summative assessment will be held twice

- Mid Term Assessment (MTA) Examination (At the end of 2<sup>nd</sup> year)
- Final/Exit Examination (At the end of Final Year)

The level of performance required for passing the exam will depend on the knowledge and skills necessary for acceptable performance and will not be adjusted to regulate the number or proportion of persons passing the examination. The pass point will be determined by careful analysis and judgment of acceptable performance.

### **Record of Clinical Cases**

The trainees will be required to keep a record of the allocated clinical work in a log book. It will be the responsibility of trainee to keep the log book up to date with the signature of the faculty certifying the work.





## **TABLE OF SPECIFICATION**

## TABLE OF SPECIFICATION

Table of specification for Mid Term Assessment (MTA) and Final (Exist) Examination is here as under

### TOS FOR MID TERM ASSESSMENT (MTA) MDS (OMFS)

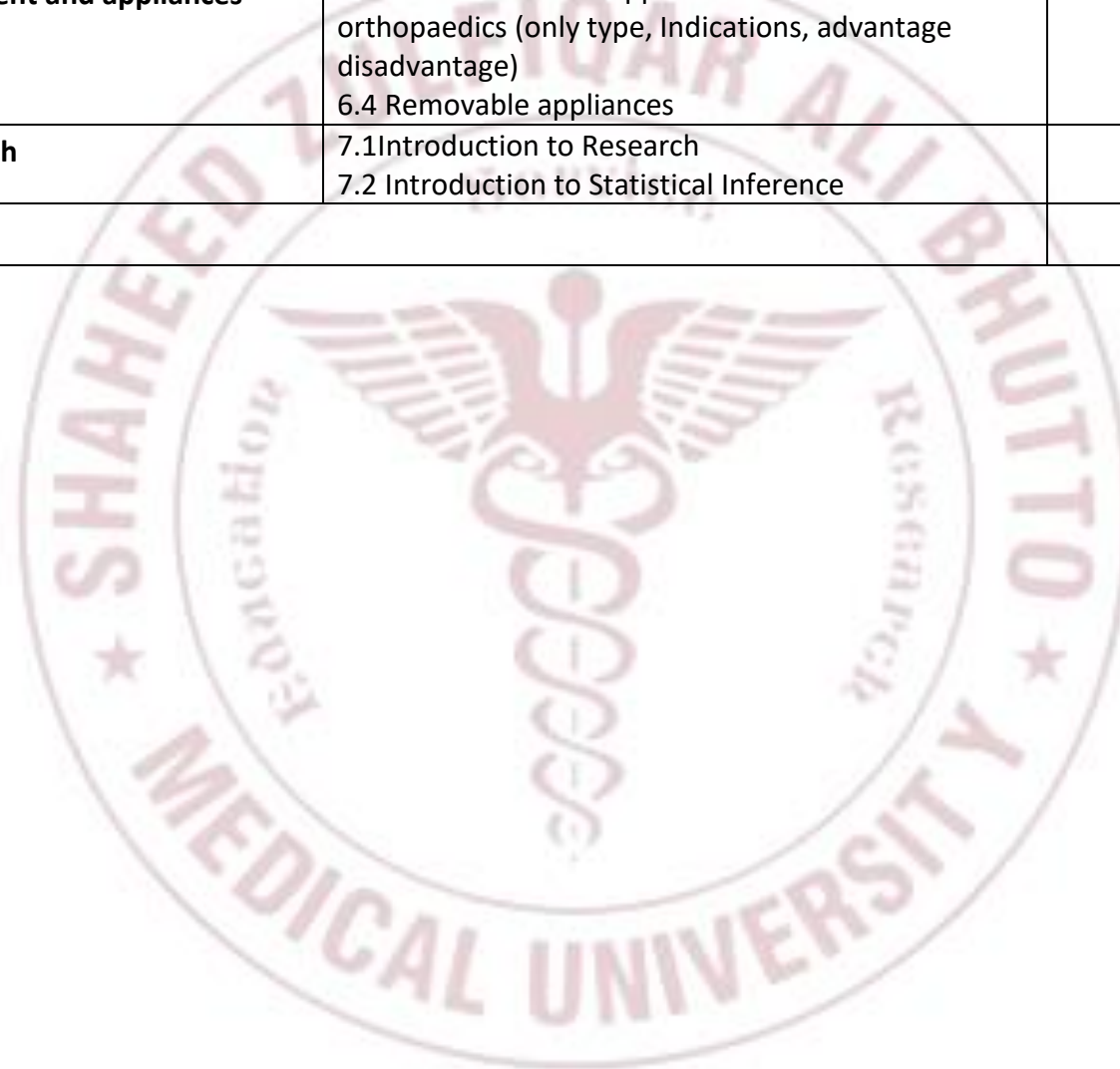
There will be theory paper as well as Practical examination

- |                              |                  |
|------------------------------|------------------|
| • <b>Theory Paper (MCQs)</b> | <b>100 Marks</b> |
| • <b>Practical (OSCE)</b>    | <b>100 Marks</b> |

## TOS FOR MTA THEORY EXAMINATION

TOS ID	Title	Detail of Title	Weightage	MCQs
Ortho-01	<b>Introduction</b>	1.1 Terminologies and branches 1.2 Need of orthodontics treatment/indices 1.3 Behavior /Psychology 1.4 Orthodontic classification 1.5 Sterilization 1.6 Practice management (Ethics & professionalism)	10%	10
Ortho-02	<b>Growth and development</b>	2.1 Basic concept of craniofacial growth 2.2 Development of dentition 2.3 Occlusion and malocclusion 2.4 Etiology of malocclusion	20%	20
Ortho -03	<b>Orthodontics Diagnosis</b>	3.1 Diagnosis aids in orthodontics 3.2 Diagnosis in impacted teeth 3.4 Diagnosis in dentofacial orthopedics 3.5 Diagnosis in dentofacial deformity 3.6 Dental radiology	20%	20
Ortho-04	<b>Orthodontics Materials</b>	4.1 Adhesives and cements 4.2 Type and properties of orthodontics materials 4.2.1 Orthodontics brackets 4.2.2 Orthodontics Wire 4.2.3 Light sources	15%	15
Ortho-05	<b>Biomechanics</b>	5.1 Bone metabolism 5.2 Concepts of orthodontic tooth	15%	15

Ortho -06	<b>Treatment and appliances</b>	6.1 Space management protocols 6.2 Interceptive orthodontics 6.3 use of functional appliance in dentofacial orthopaedics (only type, Indications, advantage disadvantage) 6.4 Removable appliances	15%	15
Ortho-07	<b>Research</b>	7.1 Introduction to Research 7.2 Introduction to Statistical Inference	5%	05
<b>TOTAL</b>			100	100



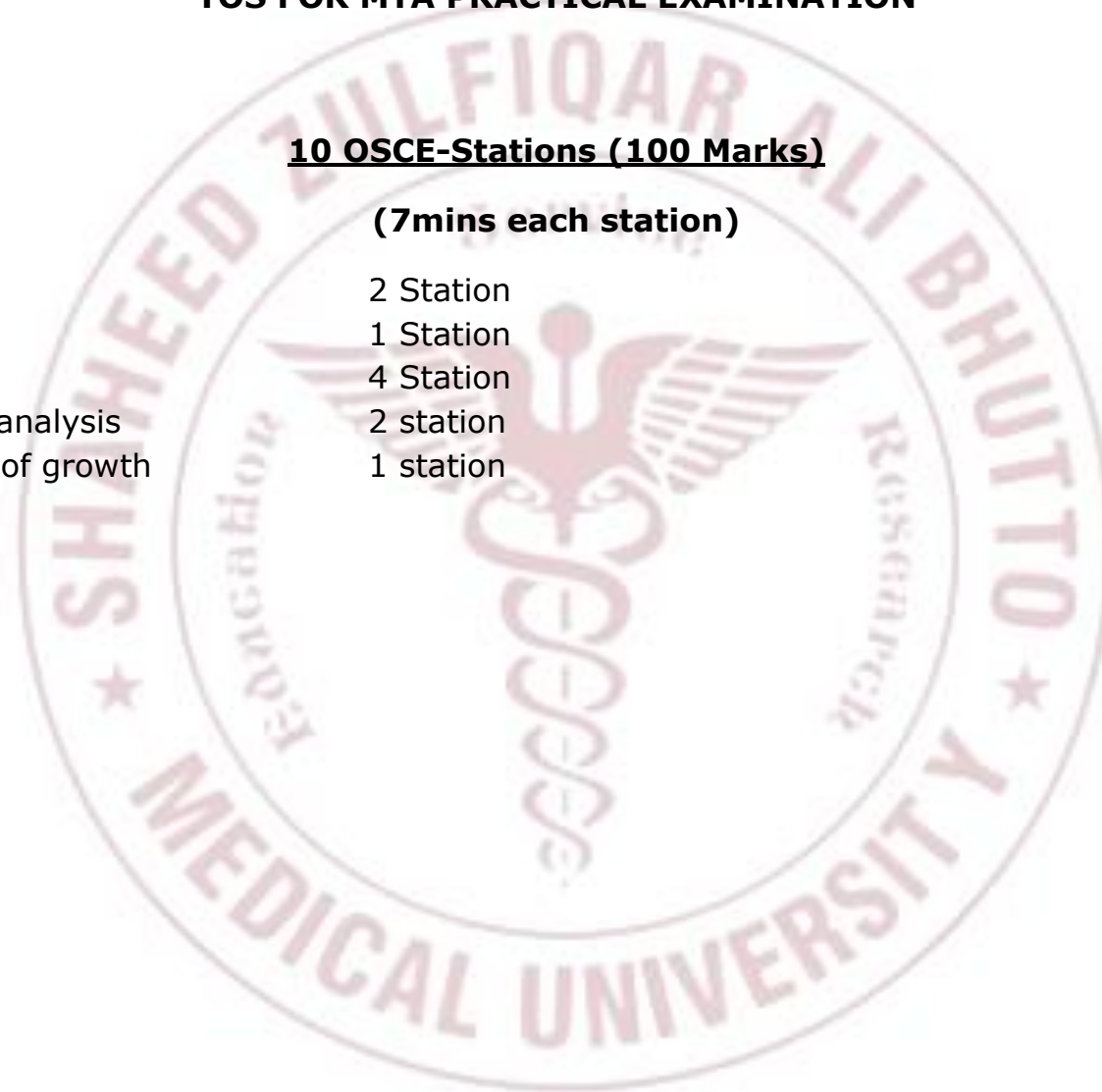
## TOS FOR MTA PRACTICAL EXAMINATION

### MTA-PRACTICAL

#### 10 OSCE-Stations (100 Marks)

(7mins each station)

- |                         |           |
|-------------------------|-----------|
| 1. Ceph                 | 2 Station |
| 2. Wire work            | 1 Station |
| 3. Diagnosis            | 4 Station |
| 4. Model/ cast analysis | 2 station |
| 5. Assessment of growth | 1 station |





# TOS for Final/Exit Examination MDS (OMFS)

## TOS for Final Exit Examination-Orthodontics

There will be two parts of this examination

### 1. Theory written examination

1.1 Paper A (100 MCQs) Specialty (Orthodontics) **100 Marks**

1.2 Paper B (20 SEQs/SAQs) Specialty (Orthodontics) **100 Marks**

### 2. Practical and Viva

2.1 Five (05) finished cases of different problems /malocclusion treated by candidates  
(06 Min each-10 marks each) **50 Marks**

2.2 OSCE (10 Stations) (07 mins each, 07 marks each) **70 Marks**

a. Interactive station of communication skill – 1 station

b. Wire bending – 2 stations

c. Cephalometry – 1 station

d. Assessment of growth – 1 station

e. Diagnosis – 3 stations

f. Interactive stations (Viva) – 2 Stations

2.3 Four (04) short cases (10 Min each -10 marks each) **40 Marks**

2.4 One (01) Long case (60 Min -40 Marks) **60 Marks**

3. Thesis Defense (Presentation 15 Mins followed by Q&A) **100 Marks**

**Total** **500 Marks**

## TOS for Theory Paper A & B Final Exit Examination

Paper I 100 MCQ  
Paper II 20 SAQ

TOS ID	Title	Detail of Title	Weightage	MCQs	SAQ
Ortho-11	<b>Advance orthodontics diagnosis</b>	11.1 Diagnosis of TMD 11.2 Diagnosis of Oral sleep apnea 11.3 Diagnosis of Cleft lip and palate 11.4 Diagnosis of syndromes 11.5 Diagnosis of dentofacial deformity	20%	20	4
Ortho-12	<b>Orthodontic material</b>	12.1 Aligners 12.2 Lingual	8%	8	1
Ortho -17	<b>Biomechanics</b>	17.1 Concept of orthodontic tooth movement related to overjet/overbite reduction, space closure, finishing and detailing by fixed appliances 17.2 Concept of orthodontic tooth movement related to aligners 17.3 Concept of wire bending 17.4 Anchorage	20%	20	4
Ortho-14	<b>Appliances and their use with mechanics</b>	10.1 Fixed appliances (all lingual & labial appliances) 10.2 Functional appliances (fabrication, mode of action, clinical management & limitations) 10.3 Orthopedic appliances (head gear etc.)	117%	20	3
Ortho-15	<b>Orthodontic management</b>	15.1 Management of; 15.1.1 dentofacial deformaties 15.1.2 Impacted teeth	24%	25	4

		15.1.3 Hypodontia 15.1.4 Multidisciplinary cases (Ortho perio, ortho-endo, ortho restorative,etc ) 15.1.5 cleft lip & palate 14.1.6 Medically compromised patients 15.1.7 Complications during orthodontic treatment 15.2 Adult orthodontics 15.3 Adjunctive orthodontic treatment 15.4 Distraction osteogenesis			
Ortho -16	<b>Retention &amp; Relapse</b>	16.1 Retention 16.2 Relapse	6%	7	1
Ortho-17	<b>Orthodontic Journals (Last 4 year)</b>	17.1. American Journal of Orthodontics and Dentofacial Orthopedics 17.2. Seminars in Orthodontics 17.3. Orthodontics update 17.4 Pakistan Orthodontics Journal POJ	3%	-	3
<b>TOTAL</b>			100%	100	20



## **LEARNING RESOURCES**

# LEARNING RESOURCES

## List of Essential Readings

### Books:

#### Latest edition of the all of the following books

- 1 Radiography by Jacobson
- 2 Orthodontics; Current principles and techniques Grabber
- 3 Contemporary Orthodontics. Proffit
- 4 The Orthodontic Treatment of Impacted teeth. Adrian Becker
- 5 Contemporary Treatment of Dentofacial Deformity. Proffit
- 6 Orthodontic Cephalometry. Athanasios E. Athanasiou
- 7 Biomechanics and Esthetic strategies in clinical Orthodontics by Nanda
- 8 Craniofacial Distraction Osteogenesis. Jason.B.Cope
- 9 Current therapies in Orthodontics. Nanda
- 10 Essential of Facial Growth. Enlow
- 11 Temporary anchorage devices in Orthodontics. Nanda
- 12 Introduction to Orthodontics. Laura Mitchell
- 13 Post Graduate Notes (University of Bristol)
- 14 Management of Temporomandibular Disorders and Occlusion; Author Jeffrey P. Okeson.

### Journals:

#### Issues of last two years of the following journals

- 1 American Journal of Orthodontics and Dentofacial Orthopedics
- 2 Seminars in Orthodontics
- 3 Orthodontics update
- 4 Pakistan Orthodontics Journal POJ





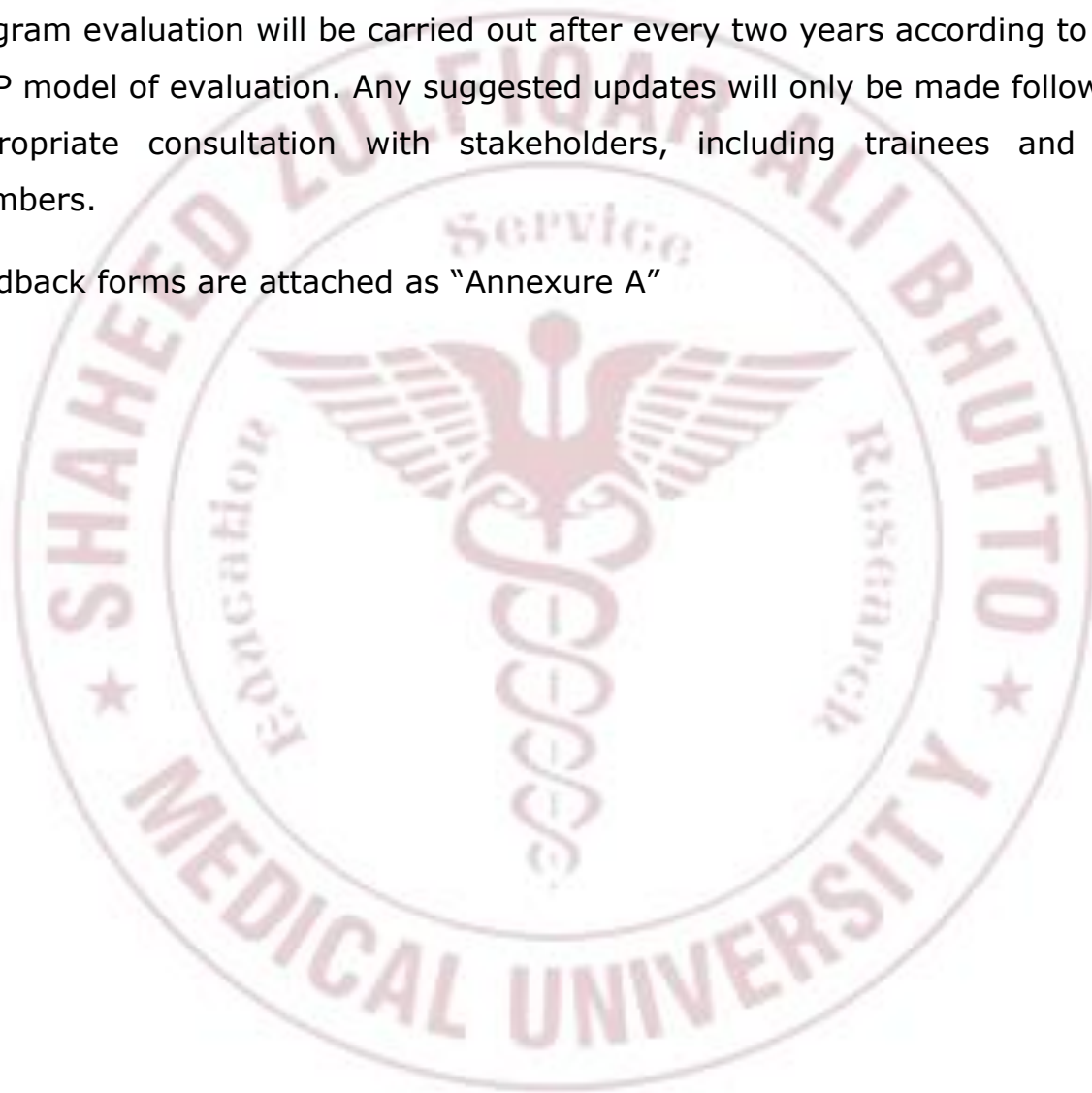
# **PROGRAM EVALUATION**

## **PROGRAM EVALUATION**

The program director will continue to ensure that the program is fit for purpose in that it provides the trainee with the appropriate knowledge, skills, attitudes and competencies required to meet the requirements of a specialist.

Program evaluation will be carried out after every two years according to the CIPP model of evaluation. Any suggested updates will only be made following appropriate consultation with stakeholders, including trainees and lay members.

Feedback forms are attached as "Annexure A"



# ANNEXURE A

## Supervisor Evaluation Form

Date: \_\_\_\_\_ Supervisor's Name: \_\_\_\_\_

Your Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Evaluations of supervisors by Trainee's are an important process for providing supervisors with an assessment of the quality of their work. Annual supervisor assessments can be used to compliment a supervisor for doing a good job. Annual assessments can also identify areas for improvement. Evaluations can strengthen communications between supervisors and trainee's.

Trainees have three options for evaluating supervisors:

- 1) Completing the Evaluation of Supervisor form.
- 2) Writing a signed memo evaluating the supervisor.
- 3) Meeting with the supervisor's department head.

Evaluations received by the deadline (January 15) will be incorporated into the annual review of the supervisor. Forms and/or signed memos should be sent to the Human Resources department.

\* \* \*

(E=Excellent, G=Good, S=Satisfactory, N=Needs Work, U=Unsatisfactory, Ø=No Opinion)

### Performs Supervisory Functions

Provides on-going positive and negative feedback	E	G	S	N	U	Ø
Makes expectations known	E	G	S	N	U	Ø
Is tactful and considerate	E	G	S	N	U	Ø
Promotes teamwork and good working relationships	E	G	S	N	U	Ø
Recognizes and addresses concerns in a timely manner	E	G	S	N	U	Ø
Delegates authority appropriately	E	G	S	N	U	Ø
Provides training of new employees	E	G	S	N	U	Ø
Provides direction of work	E	G	S	N	U	Ø

Communicates openly and honestly with peers, staff and administration	E	G	S	N	U	Ø
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**Comments:** \_\_\_\_\_

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### Develops Innovative Procedures

Is receptive to new ideas	E	G	S	N	U	Ø
Is receptive to questions	E	G	S	N	U	Ø
Encourages initiative and innovation	E	G	S	N	U	Ø

**Comments:** \_\_\_\_\_

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### III. Maintain Positive Works Enivrement

Recognizes contributions	E	G	S	N	U	Ø
Motivates workers	E	G	S	N	U	Ø
Provides relaxed yet efficient work atmosphere	E	G	S	N	U	Ø

Encourages staff development	E	G	S	N	U	Ø
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**Comments:** \_\_\_\_\_

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### Knows the Operations of the Department

Understands employee workload	E	G	S	N	U	Ø
Is alert to potential problems	E	G	S	N	U	Ø
Keeps staff informed about department and university developments	E	G	S	N	U	Ø

**Comments:** \_\_\_\_\_

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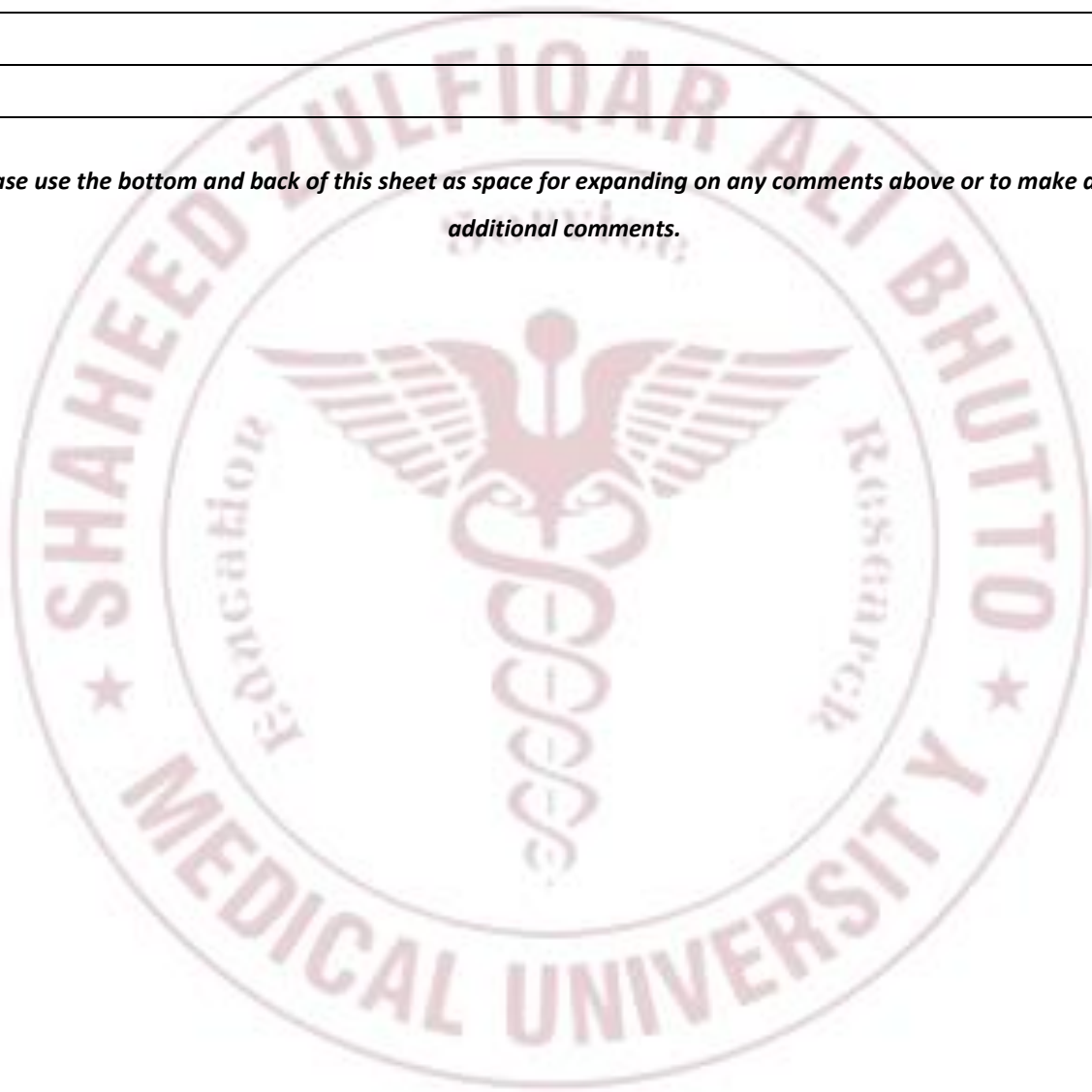
### Work Habits

Acknowledges own limitations and mistakes	E	G	S	N	U	Ø
Maintains a positive work attitude	E	G	S	N	U	Ø
Uses time efficiently and effectively	E	G	S	N	U	Ø
Demonstrates a good work ethic	E	G	S	N	U	Ø



Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*Please use the bottom and back of this sheet as space for expanding on any comments above or to make any additional comments.*



## Program Evaluation Form

Please use the following scale to indicate your response to the statements below:

**SA** = strongly agree

**A** = agree

**N** = neither agree/disagree

**D** = disagree

**SD** = strongly disagree

The information was presented effectively	SA	A	N	D	SD
The information presented was practical	SA	A	N	D	SD
The program provided a good working knowledge of the subject matter presented	SA	A	N	D	SD
The program has allowed me to acquire practical skills and knowledge to manage my business more effectively and efficiently	SA	A	N	D	SD
The program attended was sufficient for my purpose	SA	A	N	D	SD