



# Course Specifications

<b>Course Title:</b>	<b>Oral Radiology – 2</b>
<b>Course Code:</b>	<b>MDS 323</b>
<b>Program:</b>	<b>Bachelor of Dentistry [ BDS ]</b>
<b>Department:</b>	<b>Maxillofacial surgery and Diagnostic sciences [MDS]</b>
<b>College:</b>	<b>College of Dentistry</b>
<b>Institution:</b>	<b>Majmaah University</b>

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## A. Course Identification

<b>1. Credit hours:</b> 3 (2+1)
<b>2. Course type</b> a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/> b. Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
<b>3. Level/year at which this course is offered:</b> 3 <sup>rd</sup> Year / 1 <sup>st</sup> and 2 <sup>nd</sup> Semester
<b>4. Pre-requisites for this course (if any):</b> NA
<b>5. Co-requisites for this course (if any):</b> NA

### 6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	15	25%
2	Blended	NA	NA
3	E-learning	NA	NA
4	Correspondence	NA	NA
5	Other -Clinicals	75	75%

### 7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
<b>Contact Hours</b>		
1	Lecture	15
2	Laboratory/Studio	-
3	Tutorial	-
4	Others (Clinicals)	75
	<b>Total</b>	<b>90</b>
<b>Other Learning Hours*</b>		
1	Study	45
2	Assignments	15
3	Library	15
4	Projects/Research Essays/Theses	-
5	Others (specify)	-
	<b>Total</b>	<b>75</b>

\* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

## B. Course Objectives and Learning Outcomes

### 1. Course Description

This three-credit hour's course consists of theory having 1 credit hour while the practical has 2 credit hour each.

The theoretical part (1 credit hours) is designed to provide dental students with knowledge of different diseases that can appear on the radiographs along with its variable radiographic appearances.

The practical part is designed to train them to take different extra oral and intra oral radiographs apart from interpretation of these types of radiographs.

### 2. Course Main Objective

1. To make the students understand the indications, procedures and uses of various intra oral and extra oral techniques
2. To make the students capable of interpreting the various radiographs.
3. To be able to differentiate between normal anatomic landmarks of radiographs and the lesions

### 3. Course Learning Outcomes

CLOs		Aligned-PLOs
<b>1</b>	<b>Knowledge:</b>	
K3.19	Demonstrate an understanding of oral and craniofacial radiographs based on the concepts of different normal and pathological appearances on the radiograph	K3
<b>2</b>	<b>Skills:</b>	
S2.6	Apply the basic facts and concepts needed for understanding investigative radiographs for the proper diagnosis of dental problems	S2
S7.4	Demonstrate ability to perform modification to the routine radiographic procedures based on the diagnostic requirement and treatment needs	S7
<b>3</b>	<b>Competence:</b>	
C4.1	Recall advanced radiographic procedures and apply wherever necessary in dental practice for diagnosis and treatment planning	C4

## C. Course Content

S.No	List of Topics	Contact hours
	<b>Semester – 1</b>	
1	<b>Differential Diagnosis of Periapical Radiolucencies</b> <ul style="list-style-type: none"> <li>• Classification of periapical radiolucencies</li> <li>• Radiographic features of periapical radiolucencies</li> <li>• Various modifications in radiographic appearances</li> </ul>	1
2	<b>Differential Diagnosis of Pericoronal Radiolucencies</b> <ul style="list-style-type: none"> <li>• Classification of pericoronal radiolucencies               <ul style="list-style-type: none"> <li>• Radiographic features</li> </ul> </li> <li>• Various modifications in radiographic appearances</li> </ul>	1
3	<b>Differential Diagnosis of Periapical Radiopacities</b> <ul style="list-style-type: none"> <li>• Classification of periapical radiopacities               <ul style="list-style-type: none"> <li>• Radiographic features</li> </ul> </li> <li>• Various modifications in radiographic appearances</li> </ul>	1
4	<b>Differential Diagnosis of Multilocular Radiolucencies</b> <ul style="list-style-type: none"> <li>• Classification of Multilocular radiolucencies               <ul style="list-style-type: none"> <li>• There Radiographic features</li> </ul> </li> <li>• Various modifications in radiographic appearances</li> </ul>	2
5	<b>Soft Tissue Calcifications</b> <ul style="list-style-type: none"> <li>• Classification of soft tissue calcifications               <ul style="list-style-type: none"> <li>• There Radiographic features</li> </ul> </li> <li>• Various modifications in radiographic appearances</li> </ul>	1
6	<b>Radiographic Features of Fibro – Osseous Disorders – 1</b> <ul style="list-style-type: none"> <li>• Introduction to fibro – osseous disorders</li> <li>• Classification of Fibro – osseous disorders</li> <li>• Radiographic features of most common disorders</li> <li>• There appearances in advanced radiography</li> </ul>	1
7	<b>Radiographic Features of Fibro – Osseous Disorders – 2</b> <ul style="list-style-type: none"> <li>• Classification of other rare Fibro – osseous disorders               <ul style="list-style-type: none"> <li>• There Radiographic features</li> </ul> </li> <li>• Various modifications in radiographic appearances</li> </ul>	2
8	<b>Computed Tomography</b> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Working principle</li> <li>• Dental Applications               <ul style="list-style-type: none"> <li>• Advantages</li> <li>• Limitations</li> </ul> </li> </ul>	1
9	<b>Ultrasonography</b> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Working principle</li> <li>• Dental Applications               <ul style="list-style-type: none"> <li>• Advantages</li> <li>• Limitations</li> </ul> </li> </ul>	1

10	<p style="text-align: center;"><b>MRI</b></p> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Working principle</li> <li>• Dental Applications <ul style="list-style-type: none"> <li>• Advantages</li> <li>• Limitations</li> </ul> </li> </ul>	1
11	<p style="text-align: center;"><b>Salivary Gland Imaging and its disorders</b></p> <ul style="list-style-type: none"> <li>• Introduction</li> <li>• Working principle</li> <li>• Dental Applications <ul style="list-style-type: none"> <li>• Advantages</li> <li>• Limitations</li> </ul> </li> </ul>	2
12	<p style="text-align: center;"><b>Radiographic Assessment</b></p> <ul style="list-style-type: none"> <li>• Summary of different diseases and their appearances on the radiograph</li> <li>• Interpretations and modifications in the interpretation of the radiographs <ul style="list-style-type: none"> <li>• Limitations of radiology</li> </ul> </li> </ul>	1
<b>Semester – 1 – Practical</b>		
1	<p style="text-align: center;"><b>Demonstration of logging on to the computer for taking digital IOPA radiograph</b></p> <ul style="list-style-type: none"> <li>• Logging in the computer</li> <li>• Moving through the software for acceptance of taken image</li> </ul>	1
2	<p style="text-align: center;"><b>Demonstration of Radiation Protection</b></p> <ul style="list-style-type: none"> <li>• Types of radiation protection equipment</li> <li>• Applications of radiation protection equipment</li> </ul>	1
3	<p style="text-align: center;"><b>Demonstration of Image Receptor receiver</b></p> <ul style="list-style-type: none"> <li>• Inserting the sensor in the processing reader</li> <li>• Understanding the infection control to be followed for passing the sensor through the reader <ul style="list-style-type: none"> <li>• Maintenance of the sensor</li> </ul> </li> </ul>	1
4	<p style="text-align: center;"><b>Demonstration of Paralleling Cone Technique</b></p> <ul style="list-style-type: none"> <li>• How the holder is used for taking the radiograph <ul style="list-style-type: none"> <li>• How the sensor is placed in the holder</li> </ul> </li> <li>• Advantages and limitations of the technique</li> </ul>	2
5	<p style="text-align: center;"><b>Exercise on taking the radiograph</b></p> <ul style="list-style-type: none"> <li>• Take a radiograph under the supervision</li> <li>• Process the radiograph through the sensor</li> <li>• Apply necessary modifications for the betterment of the image</li> </ul>	2

6	<b>Demonstration of interpretation of radiograph</b> <ul style="list-style-type: none"> <li>• What is the importance of anatomic landmark</li> <li>• Identify the normal structures on the radiograph</li> <li>• Understand the pathology in the radiograph</li> </ul>	2
7	<b>Exercise of interpretation of radiograph</b> <ul style="list-style-type: none"> <li>• What is the importance of anatomic landmark?</li> <li>• Identify the normal structures on the radiograph</li> <li>• Understand the pathology in the radiograph</li> </ul>	6
<b>Semester – 2 – Only Practical</b>		
1	<b>Panoramic Radiograph – 1</b> <ul style="list-style-type: none"> <li>• Demonstration of how to take a radiograph</li> <li>• Understanding the process of interpretation</li> </ul>	1
2	<b>Panoramic Radiograph – 2</b> <ul style="list-style-type: none"> <li>• Will take radiograph</li> <li>• Will be able to do the interpretation</li> <li>• Various modifications in radiographic appearances</li> </ul>	1
3	<b>Lateral Cephalogram</b> <ul style="list-style-type: none"> <li>• Demonstration of how to take a radiograph</li> <li>• Understanding the process of interpretation</li> </ul>	1
4	<b>Lateral Cephalogram – 2</b> <ul style="list-style-type: none"> <li>• Will take radiograph</li> <li>• Will be able to do the interpretation</li> <li>• Various modifications in radiographic appearances</li> </ul>	1
5	<b>Para Nasal Sinus View – 1</b> <ul style="list-style-type: none"> <li>• Demonstration of how to take a radiograph</li> <li>• Understanding the process of interpretation</li> </ul>	1
6	<b>Para Nasal Sinus View – 2</b> <ul style="list-style-type: none"> <li>• Will take radiograph</li> <li>• Will be able to do the interpretation</li> <li>• Various modifications in radiographic appearances</li> </ul>	1
7	<b>Postero – Anterior Mandible – 1</b> <ul style="list-style-type: none"> <li>• Demonstration of how to take a radiograph</li> <li>• Understanding the process of interpretation</li> </ul>	1
8	<b>Postero – Anterior Mandible – 2</b> <ul style="list-style-type: none"> <li>• Will take radiograph</li> <li>• Will be able to do the interpretation</li> <li>• Various modifications in radiographic appearances</li> </ul>	1
9	<b>Reverse Towne’s View</b> <ul style="list-style-type: none"> <li>• Demonstration of how to take a radiograph</li> <li>• Understanding the process of interpretation</li> </ul>	1
10	<b>Reverse Towne’s View</b> <ul style="list-style-type: none"> <li>• Will take radiograph</li> <li>• Will be able to do the interpretation</li> <li>• Various modifications in radiographic appearances</li> </ul>	1

11	<p align="center"><b>Sub Mento Vertex View</b></p> <ul style="list-style-type: none"> <li>• Demonstration of how to take a radiograph</li> <li>• Understanding the process of interpretation</li> </ul>	1
12	<p align="center"><b>Submento Vertex View</b></p> <ul style="list-style-type: none"> <li>• Will take radiograph</li> <li>• Will be able to do the interpretation</li> <li>• Various modifications in radiographic appearances</li> </ul> <p align="center">Working principle</p>	1
13	<p align="center"><b>Radiographic Assessment</b></p> <ul style="list-style-type: none"> <li>• Summary of the different radiographic appearance and its uses</li> <li>•</li> </ul>	1

## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1	<b>Knowledge</b>		
K3.19	Demonstrate an understanding of oral and craniofacial radiographs based on the concepts of different normal and pathological appearances on the radiograph	Lectures, discussion,	Written exams (MCQs & short notes) quizzes, weekly Assessment
2	<b>Skills:</b>		
S2.6	Apply the basic facts and concepts needed for understanding investigative radiographs for the proper diagnosis of dental problems	Demonstrations, PBL, handouts, audiovisual presentations	Written Exams, oral exams, quizzes, Weekly Assess Practical exam
S7.4	Demonstrate ability to perform a modification to the routine radiographic procedures based on the diagnostic requirements and treatment needs.	Demonstrations, PBL, presentations and group discussions	oral exams, Weekly Assess Practical exam
3	<b>Competence:</b>		
C4.1	Show a good judgment in suggesting advanced radiographic procedures wherever necessary	Group discussion and demonstration	Weekly Assess Practical exam Oral exam

### 2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz 1	Week 4	5%



#	Assessment task*	Week Due	Percentage of Total Assessment Score
2	Midterm exam – Theory	Week 7	15%
3	Behavior / Professionalism	During the course	05%
4	Assignment	During the course	05%
5	Weekly Assessment	During the course	30%
6	Oral Exam	Week 12	5%
6	Midyear Practical Exam	Week 14	10%
7	Midyear Theory Exam	Week 15	15%
8	Final Practical Exam	Week 28	10%

\*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for the availability of faculty and teaching staff for individual student consultations and academic advice:**

The student shall avail the consultancy during the displayed office hours

## F. Learning Resources and Facilities

### 1. Learning Resources

<b>Required Textbooks</b>	✓ Oral radiology – principles and interpretation by Stuart C White and Michael W Pharoah 7 <sup>th</sup> edition
<b>Essential References Materials</b>	✓ Essentials of dental radiography and radiology by Eric Whaites 5 <sup>th</sup> edition
<b>Electronic Materials</b>	✓ Essentials of dental radiography and radiology – e book
<b>Other Learning Materials</b>	None

### 2. Facilities Required

Item	Resources
<b>Accommodation</b> (Classrooms, laboratories, demonstration rooms/labs, etc.)	<ul style="list-style-type: none"> <li>✓ Lecture room suitable for 30 students</li> <li>✓ Fully equipped lab for practical sessions</li> </ul>
<b>Technology Resources</b> (AV, data show, Smart Board, software, etc.)	<ul style="list-style-type: none"> <li>✓ Projector</li> <li>✓ Smart board with all the accessories</li> <li>✓ Internet</li> </ul>
<b>Other Resources</b> (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	<ul style="list-style-type: none"> <li>✓ IOPA X Ray Machine</li> <li>✓ Panoramic X Ray Machine</li> <li>✓ Soft tissues specimens and casts of oral structures</li> </ul>

## G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	<ul style="list-style-type: none"> <li>✓ Course Evaluation Survey</li> <li>✓ Quality of Exam Survey</li> </ul>
	Faculty	<ul style="list-style-type: none"> <li>✓ CLO Mapping with teaching &amp; assessment.</li> <li>✓ Course Blueprinting</li> <li>✓ Grade Analysis</li> <li>✓ Psychometric Analysis</li> </ul>
	Peers	Grade Verification
Extent of achievement of course learning outcomes	Faculty member / Quality assurance committee	<ul style="list-style-type: none"> <li>✓ Direct assessment outcome analysis</li> <li>✓ Course report preparation</li> </ul>
Quality of learning resources, etc	Students / Faculty	<ul style="list-style-type: none"> <li>✓ Academic advising surveys</li> <li>✓ Student experience survey</li> </ul>

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of the achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

<b>Council / Committee</b>	<b>Department Council</b>
<b>Reference No.</b>	<b>Meeting No.6</b>
<b>Date</b>	<b>30/08/1440</b>