



Beni-Suef University
Faculty of Dentistry
Quality Assurance Unit

Course Specification

University: Beni-Suef

Course Title: Oral Radiology

Program on which the course is given: Oral and Maxillofacial Radiology

Department offering the course:

Academic year: 2023-2024

Date of specification approval: 9-9-2023

Faculty: Dentistry

Course code: DRD5

A- Basic Information

Academic Year:	2023-2024
Course Code:	DRD5
Course Theoretical (contact hours):	1 hrs
Practical (contact hours)	2hrs
Total Hours: -	3 hrs per week
Prerequisite if any:	Oral pathology , oral medicine

B- Professional Information

1- Overall aims of course

- To provide the students with all basic information related to X-ray nature, production, interaction with matter, equipments and materials used in the process of radiography.
- To equip the students with the skills and knowledge expected related to exposing, processing, interpreting, duplicating , mounting and storing all types of intra-oral and extra-oral diagnostic radiographs in general dental practice.
- To enable the students to practice the art of interpretation and differential diagnosis of various pathological, developmental and traumatic lesions of jaws and associated structures

- To make the students more acquainted with sufficient knowledge and understanding of safety procedures to avoid hazards to themselves, to the patient and to the environment.
- To equip the students with the skills of taking periapical , occlusal and bitewing radiographs.
- To provide the students with all the information of the digital image formation procedure, to provide the students with the essential theoretical knowledge concerning the application of the CT , CBCT, Ultrasonography, Nuclear Medicine, Sialography and MRI in dentistry.

2- Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

By the end of the course, students should be able to to demonstrate the knowledge and understanding of:

A 1- State the important historical theories, fundamentals and events in the discovery of X-rays ,radiation physics, including X-rays production, different components of X-ray machine and the various properties of X-rays with special emphasis on those with direct relation to radiography and radiology.

A2- List types of radiographic films by size, number and speed (intra-oral and extra-oral). Explain the underlying principles of the use of screens and discuss its different types of structures.

A3-Define fundamentals of image production and different image characteristics as density, contrast, sharpness and resolution. Illustrate all factors affecting these characteristics.

A4- Identify principles of intra oral and extra-oral radiographic techniques, understand their indications.

A5-Identify ethical and legal principles of radiation protection with special emphasizes on their somatic and genetic effects, and to identify measures of radiation protection with illustration of different types of dosimeters used for this purpose.

A6-List fundamentals of the methodological approach and principles of radiographic interpretation and description of lesions.

A7-Identify principles of interpretation of different carious lesions , periodontal and radiographic methods of their evaluation

A8-Identify principles and fundemantals of the higher investigating modalities used in maxillofacial radiology, their basic principles, indications and limitations. (Sialography , tomography, CT, 3D CT, MRI, US , Nuclear Medicine and Digital Radiography).

b- Intellectual skills:

By the end of the course, students should be able to :

b1- analyze methodological approaches regarding proper radiographic prescription.

b2- formulate complete radiographic report for intra-oral CMS, panoramic and extra-oral radiographs.

b3- formulate differential diagnosis for various lesions with performance of complete radiographic reports.

b4- interpret higher investigating modalities (Tomograms, CT,CBCT, MRI, Sialograms).

c- Professional and practical skills:

By the end of the course, students should be able to :

c1- assess different X-ray machine components.

c2- evaluate different dental film types, sizes and speeds, as well as film cassettes and screens.

c3- choose different practical exercises through manipulating exposure parameters to distinguish between different image characteristics by different techniques.

c4- plan different intra-oral and extraoral radiographic techniques by applying the proper principles.

C5- Discover different radiographic pitfalls, different anatomical landmarks.

C6- assess, and describe different dosimeters for radiation measurements.

C7- prepare a proper radiographic report for panoramic images and complete mouth survey images (CMS).

C8- evaluate different radiographic carious lesions, assessment means of different periodontal lesions and different inflammatory lesions.

d- General and transferable skills:

By the end of the course, students should be able to :

d1- communicate effectively and collaboratively with other departments for proper tentative diagnosis and follow up of the case.

d2- demonstrate appropriate professional attitudes and behavior in different situations toward patients, colleagues and supervisors.

3- Contents:

Topic	Lecturer	Number of Lecture session covering the topic	Number of Practical sessions number covering the topic	Total Hours	Weighing of the topic	ILOs covered by this topic	Teaching method used for this topic	Assessment methods used for this topic
1-Course Outline + Introduction of X-Ray + Rules and Regulation.	Dr Walaa	1	0	1	4	A1 ,D1 , D2	Interactive lecture, small group discussion, brain storming	Written, MCQ, practical
2-Physics of Ionizing Radiation + EMS properties	Dr walid	1	1	2	4	A1,C1		
3-The X-Ray Machine and x-ray production	Dr Walaa	1	1	2	4	A1, C1		
4-Dental film	Dr Walaa	1	1	2	4	A2 , C3		
5-Intra-Oral Radiographic Technique	Dr walid	2	16	18	9	A4, B1 , C3, C4		
6-Processing of X-Ray Films	Dr Walaa	1	1	2	4	A2,B1		
7-Object localization	Dr walid	1	1	2	4	A6, B1		
8-Radiation hazard and Protection	Dr walid	1	0	1	4	A5 , C6		
9-Radiographic Errors and Artifacts (online)	Dr Walaa	1	0	1	4	A6, B1		
10-Image characteristics	Dr walid	1	0	1	4	A3 , B1,C3		

11-Intra-oral landmark	Dr Walaa	2	0	2	9	A6 ,B1		
12-Extra-oral radiographic technique	Dr Walaa	1	0	1	4	A4 , B1, C4		
13-Panoramic radiography	Dr walid	1	1	2	4	A8 , B1, B2		
14-Digital Radiography (online)	Dr Walaa	1	0	1	4	A8, B2		
15-Principle of Radiographic interpretation	Dr Walaa	1	0	1	4	A6, A7 , B1 , B3 , C7		
16-Radiographic evaluation of periodontal disease (online)	Dr Walaa	1	0	1	4	A7, B3 , C8		
17-Radiographic evaluation of dental caries	Dr walid	1	0	1	4	A7, B3 , C8		
18-Radiographic evaluation of inflammatory lesions of Jaws	Dr walid	1	0	1	4	A7, B3, C8		
19-Advanced modalities	Dr walid	2	1	3	9	A8, B4		

4- Teaching and learning methods

a – Small group discussion / Brain storming.	<u>Yes</u>
b- Interactive lecture	<u>Yes</u>
c – Demonstrations.	<u>Yes</u> (Flip charts and demo posters - Clinical demonstrations, and samples- Power point presentations (projected images)
d- Research project.	<u>Yes</u>
e- online communication	<u>Yes</u>

5- Student assessment methods

a. Written and short answer question.	<u>Yes</u>
b. Written and long essay.	<u>Yes</u>
c. Multiple choice questions (MCQ)	<u>Yes</u>
d. True or false question with justifying answer.	<u>Yes</u>
e. Practical / OSPE.	<u>Yes</u>
f. Project work .	<u>Yes</u>
g. logbooks.	<u>Yes</u>

Assessment schedule

2 Quizzes	M.T	Requirement	Project, Research	Online Homework
7x 2				
14 marks	10 marks	7 marks	3 marks	6 marks

Weighting of assessments

Final exam	After week 15 according to university regulation.	60 mark
Practical exam	Week 13 of second term	20 mark
Oral exam	Week 15 of second term	40 mark
Periodical exam	<ul style="list-style-type: none"> • Quiz 1 at 26 dec., week 11 of first semester • Quiz 2 at 15 may ,week 12 of second semester 	30 mark

	<ul style="list-style-type: none"> • Mt evaluation at 27 feb. of second semester 	
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- List of reference;

1- List of Textbooks and References:	
A . Course Notes:	Departmental TextBook (Second Edition ;Vol 1 and Vol 2)
B. Essential Books (Textbooks):	Departmental TextBook (Second Edition ;Vol 1 and Vol 2) Departmental Atlas
C. Recommended Books:	White SC and Pharoah MJ: Oral Radiology, Principles and Interpretation. 8thEdition. Mosby Elsevier, 2019
D. Periodicals, websites,..... etc.	-Lectures Online and Autotutorials Online by Prof. Axel Ruprecht, University of Iowa College of Dentistry. -Marcilan Maxillofacial Radiology: http://www.marcilan.com -The Ohio State University, College of Dentistry, Dental Radiology homepage.

Facilities required for teaching and learning

- Continuous Follow Up of X-ray Machines by Daily Reported Collected Monthly.
- Using Stabilizer for Machines So that it Works with a Stable Electric Current.
- Radiology Technician Joined the Radiology Department.
- Enter digital workflow to faculty throw digital sensor imaging.

Course coordinator: Ass. prof. **Walaa Samir**

Head of Department: Ass. prof **Walaa samir**

Date 9-9-2023