Kingdom of Saudi Arabia

The National Commission for Academic Accreditation & Assessment

Course Specifications
(CS)

Course Name	**Introduction to Oral Radiology**	
Course Code	**190124003**	
Academic Level	2nd Level	
Semester	2nd	
Study Plan No	33	
Department	Basic & Clinical Oral Science	
Division	Oral Radiology	
Academic Year	2018-2019 AD – 1439 -1440 AH	
Contact hours	Theoretical	1 / week
	Practical	2 / week
	Clinical	Non / week
Total Contact Hrs	3 / week	
Total Credit Hrs	2	

Course Specifications

Institution: UMM AL QURA UNIVERSITY	Date of Report: 13/12/2018
College/Department: Collage of Dentistry-Department of Basic and Clinical Oral Science	

A. Course Identification and General Information

1. Course title and code: Introduction to Oral Radiology/ Code:1901 240 03
2. Credit hours: 2 credit hours
3. Program(s) in which the course is offered:
   Bachelor Degree of Dental Medicine and surgery (B.D.S)
   (If general elective available in many programs indicate this rather than list programs)
4. Name of faculty member responsible for the course: Professor Dr.Khaled Alashiry
5. Level/year at which this course is offered: Second Year –Second Semester
6. Pre-requisites for this course (if any):
   Successful completion of the first year.
7. Co-requisites for this course (if any)
   1-Basic medical science II 2-Dental anatomy
8. Location if not on main campus:
   This course is offered in the main campus
9. Mode of Instruction (mark all that apply)

a. Traditional classroom	Yes	What percentage?	40 %
b. Blended (traditional and online)		What percentage?	
c. e-learning		What percentage?	
d. Correspondence		What percentage?	
e. Other (practical)	Yes	What percentage?	60 %

Comments:
Didactic: Lecture with interactive discussion with students in the class room.
Practical session: Practical sessions for training on intraoral radiographic examination of all dentition.

B Objectives

1. What is the main purpose for this course? The purpose of this course is to assist students in mastering fundamental concepts and principles that are essential for effective and safe utilization of dental X- rays in accordance with good professional judgment. This course also establishes a good foundation for students from which they can acquire additional knowledge and answer questions often raised by patients and others about the biological effects of X-rays as used in dentistry. This course consists of a systematic study of intraoral and extra-oral radiographs emphasizing radiographic interpretation of the normal anatomical landmarks of osseous structures, teeth and associated structures of maxilla and mandible. Also this course focus on the application of digital radiology in dentistry together with the advanced medical radiographic techniques that may has a great benefit in the field of oral radiology.
2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field) Activate the interpersonal skill and providing more focus on the electronic learning/PBL and provide logistic for the interactive learning.

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

1. Topics to be Covered		
List of Topics(lectures)	Contact hours / week	Contact Hours
1- Nature of Atomic Radiations	1hour/week for 1 week	1
2- Principle of X-ray Production and interaction with matter	1hour/week for 1 week	1
3- Dental X-ray Image Characteristic(visual, geometric)	1hour/week for 1 week	1
4- Image receptors	1hour/week for 1 week	1
5- Intra-oral Radiographic Techniques	1hour/week for 2 week	1
6- Exposure and Technique Errors	1hour/week for 1 week	1
7- Occlusal and Localization Technique	1hour/week for 1 week	1
8- Normal radiographic Anatomical Landmarks and film Mounting	1hour/week for 2 week	1
9- Panoramic Radiography	1hour/week for 1 week	1
10- Extra-oral Radiography	1hour/week for 1 week	1
11- Advanced Imaging Modalities	1hour/week for 1 week	1

12- Biologic Effects of radiation/radiation protection	1hour/week for 1 week	1
Total	12	12

Practical sessions

List of Topics(lectures)	Contact hours / week	Contact Hours
1- Application of XCP holder in manikin for different parts of the mouth for paralleling and bitewing technique	2 hour/week for 1 week	2
2- Radiographic digital exposure of teeth #6, 7, 8 9,10,11 using XCP and paralleling technique and proper mounting	2 hour/week for 2 week	4
3- Radiographic digital exposure of teeth #27,26,25,24,23,22 using XCP and paralleling technique and proper mounting	2 hour/week for 2 week	4
4- Radiographic digital exposure of teeth #1,2,3,4,5 and teeth #17,18,19, 20,21 using XCP and paralleling technique and proper mounting	2 hour/week for 2 week	4
5- Radiographic digital exposure of teeth #12,13,14,15,16 and teeth #28,29,30,31,32 using XCP and paralleling technique and proper Mounting	2 hour/week for 2 week	4
6- Digital bitewing exposure of right premolars and molars and proper mounting	2 hour/week for 1 week	2
7- Digital bitewing exposure of left premolars and molars and proper Mounting	2 hour/week for 1 week	2
8- Retake	2 hour/week for 1 week	2
Total	12	24

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory	Practical	Other:	Total
Contact Hours	12			24		36
Credit	1			1		2

3. Additional private study/learning hours expected for students per week.	2 hrs / Week

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

Course Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning, assessment, and teaching.

The ***National Qualification Framework*** provides five learning domains. Course learning outcomes are required. Normally a course has should not exceed eight learning outcomes which align with one or more of the five learning domains. Some courses have one or more program learning outcomes integrated into the course learning outcomes to demonstrate program learning outcome alignment. The program learning outcome matrix map identifies which program learning outcomes are incorporated into specific courses.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. **Fourth**, if any program learning outcomes are included in the course learning outcomes, place the @ symbol next to it.

Every course is not required to include learning outcomes from each domain.

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	**Knowledge**		
1.1	Recognize the nature, production, biologic effects, and means of protection of dental x-ray.	Interactive lectures Practical session	Quiz exam Midterm written exam Final written exam Final OSPE
1.2	Demonstrate the principle, indications, advantages, disadvantages and corrective measures of intraoral and extra-oral radiographic techniques related to dental practice**. @**		

1.3	Describe normal radiographic landmarks related to different intraoral and extra-oral radiographic images		
2.0	**Cognitive Skills**		
2.1	Demonstrate proper interpretation for normal anatomical landmarks and associated structures of both jaws that could appears in intra-oral, panoramic and extra-oral images**. @**	Interactive lectures Practical session Radiographic interpretation assignments	Quiz exam Midterm written exam Final written exam Final OSPE Assessment of the assignment
3.0	**Interpersonal Skills & Responsibility**		
3.1	Act responsibly and ethically in carrying out tasks in due time.	Practical sessions Radiographic interpretation assignments	Continuous practical assessment using rubric Assessment of the assignment
4.0	**Communication, Information Technology, Numerical**		
4.1	Communicate well with peers and superiors.	Encourage students to make extensive use of material on the web.	Assessment of the assignment
4.2	Utilize E- textbooks, online authorized and reliable medical information, and other medical software.		
5.0	**Psychomotor**		
5.1	Perform the necessary patient's adjustment appropriate for periapical and bitewing radiographs with proper mounting.	Practical sessions	- Continuous practical assessment using rubric -Final practical exam.
5.2			
5.3			

Suggested Guidelines for Learning Outcome Verb, Assessment, and Teaching

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write

Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyze, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyze, question, and write
Communication, Information Technology, Numerical	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

.
Suggested ***verbs not to use*** when writing measurable and assessable learning outcomes are as follows:

Consider Maximize Continue Review Ensure Enlarge Understand
Maintain Reflect Examine Strengthen Explore Encourage Deepen

Some of these verbs can be used if tied to specific actions or quantification.
Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates,

5. Schedule of Assessment Tasks for Students During the Semester			
	Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment
1	Quiz		5%
2	midterm exam		15%
3	Radiographic interpretation assignments		10%
4	Continuous practical assessment using rubric		20%
	Practical exam on simulated patient		15%
	Final OSPE		15%
5	Final exam(MCQ and short essay)		20%
Total			100%

D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Scheduled office hours and students consultation 4hours/week for every staff available

E. Learning Resources

1. List Required Textbooks

1.1. White SC and Pharaoh MJ, 2017, Oral Radiology Principles and interpretation: 7th edition, USA, Mosby ELSEVIER

2. List Essential References Materials (Journals, Reports, etc.)

2.1. Journal of Dento Maxilla- Facial Radiology (DMFR), 2018.

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc).

3.1. Joen I. Haring and Laura Jansen2016, Dental Radiography: Principles and Techniques: 5th edition, USA,WB Saunders

3.2. Eric White's 2013, Essential of Dental radiography and radiology : fifth edition,UK, Harcut HealthScience.
3.3 Bushberg JT: The essential physics of medical imaging. 2nd, Baltimor, 2001, Lippincott Williams & Wilkins.
3.4. Horner Rushton VE: European guideline on radiation protection in dental radiology: The safe use of radiographs in dental practice,Radia Protect 2004, 136:1-115.
3.5. Schulze RK, Hoed B: A method to calculate angular disparities between object and receptors in paralleling technique, Dentomaxillofacial Radiol 2002, 31:32-38.
3.6.Cone Beam Computed Tomography: Oral and Maxillofacial Diagnosis and Applications 1st Edition, Kindle Edition,2016
3.6. FriendlanderAH, FrymilerEG.:Detection of radiation- accelerated atherosclerosis of the carotid artery by panoramic radiography: a new opportunity for dentist ,J Am Dent Assoc 2003,143:1361-1365.

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)

4.1. Kassel MJ.: An atlas of dental radiographic anatomy.1999 available at (www../dental/courseslorad_anatomy/). Accessed October 1999
4.2. White: Oral Radiology. 2009-2012, available at "www.evolve.elsevier.com". Accessed November 2012
4.3. Kim YK and KimJD.: Magnification rate of digital panoramic radiography, 2011, Dentomaxillofacial radiology available at "www.dmfr.journals.org". Accessed November 2011.
4.4. Ohshima A, et al: Computed tomographic anatomy of the mandibular first and second molars and surrounding structures in the spread of odontogenic infection.2009 Oral radiology available at "www.ORAD.org". Accessed December 20, 2009.
4.5. Shawnean G.: Cone Beam CT slice thickness. 2012, available at Journal of American Dental Association "www.JADA.org", Accessed December 21, 2012
4.6. NagasakiUN.:Teaching cases of Oral Radiology. 2005, available at "www.dh.nagasaki-u.ac.jp/tf/contents htmls". Accessed December 22, 2005.

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.).
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.). 1.1. Well-equipped class room with adequate illumination and ventilation(for 50 students) 1.2. Seminar room for group discussion and case presentation (10 students) 1.3. Interactive room equipped with 50 laptops
1. Computing resources (AV, data show, Smart Board, software, etc.) Computers, Data Show and Plasma Screen.
1. Other resources (specify, e.g. if specific laboratory equipment is required, list

requirements or attached list) 1 .1. Led lined x-ray rooms at least 10 in numbers equipped with digital x-ray machine With CCD or CMOS sensors. 1. 2.Ten DEXTTRII manikin for intraoral examination exposure training 1.3. One manikin for training extra oral, CBCT and panoramic examination.

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching. Exam result evaluation Assessment method evaluation
2. Other Strategies for Evaluation of Teaching by the Program/Department Instructor Student questioner.
3. Processes for Improvement of Teaching Internal audit Student feedback on teaching process(staff efficiency, quality of teaching subjects, practical sessions duration) .
4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution) Periodic exchange and remarking of a sample of assignments with a faculty member in another dental specialty.
5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement. Students feedback evaluation implementation Check course teaching hours sufficient or not Check staff numbers per students Check lab hours for practical sufficient or not Student comments on course from all aspects

Faculty or Teaching Staff: **Professor Dr. Khaled Alashiry**
Lecturer: Dr. Mahmoud Ali

Signature: **Date Report Completed: 13/12/2018**

Received by: Dr.Machael alquahtani _____ Department Head

Signature: _____ Date: __13/12/2018_____