KING SAUD UNIVERSITY
COLLEGE OF DENTISTRY

Course Specification

Course Title:	**Clinical Oral &Maxillofacial Radiology ll**
Course Code:	**343 DDS**
Course Director(s):	**Dr. Raed Al Sadhan (DUC)** **Dr. Asma'a Al Ekrish (MUC)**
Department:	**Oral Medicine and Diagnostic Sciences**
Academic Year	**2013-2014**

Course Specification

Institution	King Saud University
College/Department:	College of dentistry/ Oral Medicine and Diagnostic Sciences

A Course Identification and General Information

1. Course title and code:	Clinical oral &Maxillofacial Radiology ll (343 DDS)
2. Credit hours	2
3. Program(s) in which the course is offered.	BDS –Bachelor Of Dental Surgery
4. Name of faculty member responsible for the course	Dr. Raed Al Sadhan (DUC) Dr. Asma'a Al Ekrish (MUC)
5. Level/year at which this course is offered	3RD Year (first and second semester)
6. Pre-requisites for this course (if any)	243 DDS(Clinical Oral &Maxillofacial Radiology l)
7. Co-requisites for this course (if any)	Not Applicable
8. Location if not on main campus	DUC and MUC

B Objectives

Summary of the main learning outcomes for students enrolled in the course.

Upon completing the course, the students will be able to:

1. Identify different orthogonal sectional planes of the head and list the normal anatomical landmarks in the head and neck area. (1.1, 1.4)
2. Relate the radiographic appearance of oral and maxillofacial structures on different tomographic planes (axial, coronal, sagittal and cross sectional) to each other. (1.1, 1.4, 2.1)
3. Identify and describe the radiographic appearance of common oral and maxillofacial diseases. (1.2, 1.4, 2.1, 2.2)
4. Correlate the clinical and radiographic features of common oral and maxillofacial diseases. (1.2, 2.1, 2.2)
5. Formulate a structured radiographic interpretation of oral and maxillofacial imaging. (1.1, 1.2, 2.2)
6. Analyze the clinical and radiographic findings to reach a differential diagnosis of the radiographic lesion. (1.2, 2.2,3.4)
7. Arrange the possible differential diagnosis list according to presentation and prevalence of diseases. (1.2, 2.1, 2.1)
8. Select suitable advanced imaging modalities to investigate the differential diagnosis of the lesions. (1.6, 2.1, 3.2)
9. Operate panoramic and intraoral units to acquire a diagnostic image on patients. (1.4, 2.1,5.1)
10. Analyze produced radiographs, detect technical errors and to decide if the image is of diagnostic quality or if the patient need to be re-exposed. (1.4, 2.1)

2. Briefly describe any plans for developing and improving the course that are being implemented. (eg increased use of IT or web based reference material, changes in content as a result of new research in the field)

1. To improve the student skills in investigating oral and maxillofacial radiographic lesions and develop their skills in formulating differential

diagnosis, cases will be assigned in the beginning of the second semester to all students with a brief history and relevant images to interpret and present and discuss in the class with colleague, the student will submit a written radiographic interpretation report.

2. Utilization of IT resources as well as conventional textbooks and literature that will help students with their assigned cases projects.
3. International collaboration with other dental schools to develop online tutorials and teaching materials and aids.

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 - First Semester	No of Weeks	Contact hours
Introduction and Orientation to the Course	1	1
Sectional Anatomy	2	1
Inflammatory lesions of Jaws	3	1
Odontogenic and Non-Odontogenic Cysts	4	1
Benign Tumors of Jaw Bones	5	1
Malignant Tumors	6	1
Bone diseases with Jaw Manifestation	8	1
Soft Tissue Calcifications	9	1
Trauma to the Facial structures	10	1

Systemic Disease Manifested in the Jaws	11	1
Maxillary Sinus Diseases and Imaging Review of normal development, anatomy, functions and diagnostic imaging.	12	1
Salivary Gland Diseases and Imaging	13	1
Temporomandibular Joint Disorders and Imaging	14	1
Second semester		
Panoramic Report Demonstration	2	2
Introduction to Differential Diagnosis	2	2

2 Course components (total contact hours per semester):				
Lecture: 14	Tutorial:	Clinic 42	Practical/Field work/Internship	Other:

3. Additional private study/learning hours expected for students per week. (This should be an average: for the semester not a specific requirement in each week)
2 hours

4. Development of Learning Outcomes in Domains of Learning

For each of the domains of learning shown below indicate:

A brief summary of the knowledge or skill the course is intended to develop;

A description of the teaching strategies to be used in the course to develop that knowledge or skill.

The methods of student assessment to be used in the course to evaluate learning outcomes in the domain concerned.

a. Knowledge

(i) Description of the knowledge to be acquired

By the end of the course, student should be able to:
1- Identify different imaging modalities (1.1, 1.4)
2- Recognize normal and abnormal radiographic features. (1.1, 1.4)
3- Identify the radiographic appearance of the most common pathologic condition in the maxillofacial region. (1.1, 1.4)

(ii) Teaching strategies to be used to develop that knowledge

Lectures, Assigned cases reporting and presentation, Clinical exercise and requirements, group discussions

(iii) Methods of assessment of knowledge acquired

1. Written examination
2. Writing and presenting report for assigned cases
3. Practical open book quizzes
4. Take home assignment
5. Submission of radiographic procedures performed by student

b. Cognitive Skills

(i) Description of cognitive skills to be developed

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

1. Relate the radiographic appearance of oral and maxillofacial structures on different tomographic planes (axial, coronal, sagittal and cross sectional) to

each other. (2.1,2.2)

2. Correlate the clinical and radiographic features of common oral and maxillofacial diseases. (2.1,2.2)
3. Formulate a structured radiographic interpretation of oral and maxillofacial images. (2.1,2.2)
4. Analyze the clinical and radiographic findings to reach a differential diagnosis of the radiographic lesion. (2.1,2.2)
5. Arrange the possible differential diagnosis list according to presentation and prevalence of diseases. (2.1,2.2)
6. Select suitable advanced imaging modalities to investigate the differential diagnosis of the lesions. (2.1,2.2)
7. Analyze produced radiographs to detect technical errors and to decide if the image is of diagnostic quality or if the patient needs to be re-exposed. (2.1,2.2)

(ii) Teaching strategies to be used to develop these cognitive skills

1. Lectures
2. Tutorials
    a. Cases will be assigned in the beginning of the second semester to all students with a brief history and relevant images to describe and interpret the image to formulate differential diagnosis.
    b. Group discussions on assigned cases
3. Radiographic Procedures (20 CMS and panoramic for the patients)
4. Exercises on self-evaluation of radiograph taking
5. Formative assessment

(iii) Methods of assessment of students cognitive skills

1. Written exams
2. Problem solving questions
    - Cases will be assigned in the beginning of the second semester to all students with a brief history and relevant images to interpret and present and discuss in the class with colleague, the student will submit a written radiographic interpretation report".

3. Evaluation of student self-evaluation of radiograph taking
   - Students' self-evaluation will be compared to the instructor's evaluation

c. Interpersonal Skills and Responsibility

(i) Description of the interpersonal skills and capacity to carry responsibility to be developed

1. Respond to queries related to their interpretation reports.(3.1)
2. Organized group work in case analysis and presentation.(3.4)
3. Select suitable advanced imaging modalities to investigate the differential diagnosis of the lesions. (3.2)

(ii) Teaching strategies to be used to develop these skills and abilities

1. Presentations
2. Case studies (Each student will make one cases of complete mouth radiographic survey (20 CMS films) as well as panoramic radiograph on assigned patients from the Oral and Maxillofacial Radiology Clinic, the student should explain the procedure to the patient and answer his questions then give necessary instructions and perform the procedure then presenting the resulting images to be discussed and evaluated.
3. The student will write a radiographic report for assigned cases that will be presented, corrected and evaluated with each student on-to-one setting.

(iii) Methods of assessment of students interpersonal skills and capacity to carry responsibility

1. Direct evaluation of the radiographic procedures and radiographic report writing.
2. Discussion of the oral presentation and evaluation.

d. Communication, Information Technology and Numerical Skills

(i) Description of the skills to be developed in this domain.

1. Write interpretation reports of oral and maxillofacial images. (4.1)

2. Conduct oral presentation of the assigned cases. (4.1)

(ii) Teaching strategies to be used to develop these skills

1. Assignments
2. Supplying the students with internet addresses (URL) of relevant sites and introducing them to the navigation of these sites.

(iii) Methods of assessment of students numerical and communication skills

Evaluation of take home projects, assigned cases reports and presentation.
Objective structured clinical assessment (OSCE).

e. Psychomotor Skills (if applicable)

(i) Description of the psychomotor skills to be developed and the level of performance required

1. Perform intraoral and panoramic images on patients using both conventional and digital x-ray sensors.(5.1)
2. Process the acquired films and mount it and label it with patient personal identification information.(5.1)

(ii) Teaching strategies to be used to develop these skills

1. Clinical demonstration on radiography training dummy heads.
2. Audio visual demonstration.

(iii) Methods of assessment of students psychomotor skills

- Cases will be presented and discussed individually by each student with the faculty.

5. Schedule of Assessment Tasks for Students During the Semester- replace with grades in course description?

Assessment	Assessment task (eg. essay, test, group project, examination etc.)	Week due	Proportion of Final Assessment
1	First continuous assessment	Week 9	15%

	examination		
2	Second continuous assessment	Week 16	15%
Second semester			
3	Clinical requirements (20 CMS and panoramic radiograph taking, evaluation of radiograph taking, writing and presenting 20 CMS and panoramic interpretation reports)	Weeks 3-14	17%
4	Case presentation activities	Weeks 3-14	13%
5	Final clinical examination	Weeks 15	40%

D. Student Support

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

    1. Faculty office hours: one hour per week.

    2. Website for the course with e-mail address for communication (24/7).

E. Learning Resources

Required Text(s)

1. Oral Radiology principles and Interpretation, 6th edition (2009) By: White and Pharoah.
2. Fundamentals of Sectional Anatomy, an Imaging Approach, By Denise L. Lazo. 2005, (OnlyChapter 2).

2. Essential References

1. Lectures
2. Differential Diagnosis Of Oral Lesion (section on bony lesions) by Wood and Goaz
3. Separate recommendations for further reading will be given at the end of each

lecture.

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

4.Electronic Materials, Web Sites etc

Main: http://faculty.ksu.edu.sa/sadhan

http://faculty.ksu.edu.sa/asmaalekrish/default.aspx

1. **Oral Radiographic Differential Diagnosis (ORAD II):** http://www.orad.org/index.html
2. **Marcilan Maxillofacial Radiology:** http://www.marcilan.com
3. **European Academy of Dentomaxillofacial Radiology:** http://www.eadmfr.eu/training/anatomy-cbct-images
4. **Marcilan Anatomy website** http://www.marcilan.com/anatomy/
5. **Oral Radiographic Differential Diagnosis (ORAD II):** http://www.orad.org/index.html
6. **UCLA - Division of Oral and Maxillofacial Radiology** http://www.dent.ucla.edu/sod/depts/oral_rad/courses/
7. **University of Pittsburgh - Division of Oral and Maxillofacial Radiology.** http://www.pitt.edu/~pittdent/pages/stdntsrvs/Radiology/dmdrad.html
8. **University of North Carolina at Chapel Hill - Division of Oral and Maxillofacial Radiology.** http://www.dent.unc.edu/radiology
9. **Dalhousie University - Division of Oral and Maxillofacial Radiology.** http://bpass.dentistry.dal.ca/DalORadHomePage.html
10. **Asahi University - School of Dentistry** http://nagara.hatelecom.or.jp/dentistry.Asahi-u/orad/teach2.html
11. **University of Iowa College of Dentistry** http://www.uiowa.edu/~introrad/
12. **Digital Imaging** http://ddsdx.uthscsa.edu/dig/digimage.html
13. **EMORY** http://www.emory.edu/EMORY_CLASS/RADIOLOGY/Radiology_Contents.html
14. **Nagasaki University** - Hospital of Dentistry http://w3.dh.nagasaki-u.ac.jp/tf/
15. **The Visible Human Project** http://www.nlm.nih.gov/research/visible/visible_human.html

16. **TMJ Tutorial - University of Washington**
    http://www.rad.washington.edu/Anatomy/TMJ/TMJISMAP.html
17. **University of Washington**
    http://www.rad.washington.edu/AnatCaseList.html
18. **American Academy of Oral and Maxillofacial Radiology:**
    http://www.aaomr.org/index.php
19. **Learn Digital:** http://www.learndigital.net/

3. Other learning material such as computer-based programs/CD, professional standards/regulations

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (ie number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Lecture rooms, laboratories, etc.)

    1. Class room (80 seats in DUC and 45 seats in MUC)
    2. Oral Radiology Clinic with 6 intra oral x-ray clinics and two panoramic / cephalometric clinics (both digital and conventional).
    3. Dark room with automatic radiographic processor.
    4. Radiographic Interpretation room (with 80 stations in DUC and 45 stations in MUC).

2. Computing resources

    Computer lab with access to information data basis.

3. Other resources (specify --eg. If specific laboratory equipment is required, list requirements or attach list)

G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching
   Annual course evaluation of course by students

2. Other Strategies for Evaluation of Teaching by the Instructor or by the Department

1. Teaching and student training is conducted by a team of teaching faculty contributors with the course director. Course contributors attend lectures and review student evaluation strategies, materials and methods. Collection of ppt and exams at the end of semester by QA member to be evaluated, Pre-arranged QAC faculty evaluation during work.

2. Processes for Improvement of Teaching

1. Continuous education for the staff and technicians.
2. Visiting faculty.
3. Attending workshops

4. Processes for Verifying Standards of Student Achievement (eg. 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)

Course contributors review student achievements.

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Periodic divisional and departmental reviews of course reports and the files.