



King Saud University
College of Dentistry
Dept. of Oral Medicine & Diagnostic Sciences
Division of Oral & Maxillofacial Radiology

Course Description

343 DDS- Clinical Oral and Maxillofacial Radiology II (2013-2014)

Course title: Clinical Oral & Maxillofacial Radiology II

Course No & Code: 343 DDS

Credit Hours: 2 h (1h lecture & 1h clinical)

Level: Third year undergraduate level

Prerequisite: 243 DDS Physics of Diagnostic Radiology and Oral and Maxillofacial Radiology

Academic Year: 2013-2014

Course Director (MUC): Dr. Asma'a Al-Ekrish- Assistant Professor , OMF Radiology

Course Contributors (MUC): Dr. Wafa Al-Faleh- Associate Professor, OMF Radiology

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1.0 General Description:

This is the second course of oral radiology which is a comprehensive course in radiographic interpretation and differential diagnosis of developmental and pathological lesions, and fractures of the jaws and associated structures. The course is covered by lectures in the first half of the year and practical and tutorials in the second half. The lectures in the first half will encourage the student to present and participate in case discussion sessions in the second half.

2.0 **References:**

1. **Lectures**

2. **Required Textbooks:**

Oral radiology- Principles and Interpretation. 6th edition

By: White and Pharoah

Fundamentals of Sectional Anatomy, An Imaging Approach, 2005 (Only Chapter 2).

By: Denise L. Lazo

3. **Suggested reading:**

Differential Diagnosis of Oral Lesions (*section on bony lesions*)

By: Wood and Goaz

Separate recommendations for further reading will be given at the end of each lecture.

4. **Recommended Web Links:**

Oral Radiographic Differential Diagnosis (ORAD II):

<http://www.orad.org/index.html>

Marcilan Maxillofacial Radiology:

<http://www.marcilan.com>

European Academy of Dentomaxillofacial Radiology:

<http://www.eadmfr.eu/training/anatomy-cbct-images>

3.0 Content of Lectures:

Chapters and pages from Oral Radiology principles and Interpretation, 6th edition unless otherwise specified.

3.01 Sectional anatomy- chapter 2 (Textbook: Fundamentals of Sectional Anatomy, an imaging approach, By Denise L. Lazo 2005):

- ♦ Sectional bony anatomy of axial, coronal and sagittal of the oral and maxillofacial structures

3.02 Inflammatory lesions of the jaws- chapter 20:

Review of: acute apical periodontitis, chronic apical periodontitis, periapical granulomas, and radicular cyst. Clinical features, radiographic appearance, and differential diagnosis of rarefying and sclerosing osteitis, osteomyelitis and osteoradionecrosis.

3.03 Odontogenic and non-odontogenic cysts- chapter 21

Definition, clinical features, radiographic features, and differential diagnosis of:

- ♦ Odontogenic cysts
 - Radicular cyst
 - Residual cyst
 - Dentigerous cyst
- ♦ Non-odontogenic cysts
 - Nasopalatine duct cyst (incisive canal cyst)
- ♦ Cyst-like lesions
 - Simple bone cyst (traumatic bone cyst)
 - Lingual salivary gland defect (Stafne cyst)-(p. 574)
 - Aneurysmal bone cyst- (p. 445)

3.04 Benign odontogenic tumors- chapter 22

- Definition, clinical features, radiographic features (location, shape, periphery, internal structure, and effect on surrounding structures) and differential diagnosis of the following **benign odontogenic tumors**:

- ♦ Odontogenic epithelial tumors
 - Ameloblastoma
 - Adenomatoid odontogenic tumor (AOT)

- Keratocystic odontogenic tumor (KOT)
- ◆ Mixed odontogenic tumors
 - Odontoma
- ◆ Odontogenic mesenchymal tumors
 - Odontogenic myxoma

3.05 Benign non-odontogenic tumors- chapter 22 (p. 410)

- Definition, clinical features, radiographic feature, and differential diagnosis of the following **hyperplastic** lesions (p. 367):
 - ◆ Torus palatinus
 - ◆ Torus mandibularis
 - ◆ Enostoses
 - ◆ Idiopathic osteosclerosis
 - ◆ Exostoses
- Definition, clinical features, radiographic features, and differential diagnosis of the following **benign non-odontogenic tumors**:
 - ◆ Tumors of neural origin:
 - Traumatic neuroma
 - ◆ Mesodermal tumors:
 - Osteoma

3.06 Malignant tumors- chapter 23

- Radiographic characteristics of **malignant tumors**, difference between benign and malignant tumors.
- Definition, clinical features, radiographic features, and differential diagnosis of the following **malignant tumors**:
 - ◆ Carcinomas
 - Squamous cell carcinoma
 - Metastatic carcinoma
 - ◆ Sarcomas
 - Osteosarcoma

3.07 Trauma to the Facial Structures- chapter 29

- ◆ Introduction and general radiographic signs of fracture.

- ♦ Clinical and radiographic appearance of:
 - Mandibular fractures
 - Condylar fractures
 - Midface fractures
 - Zygomatic complex fractures

3.08 Bone diseases with jaw manifestation- chapter 24

Definition, clinical features, radiographic features, and differential diagnosis of:

- ♦ Fibrous dysplasia
- ♦ Periapical cemental dysplasia
- ♦ Florid osseous dysplasia
- ♦ Cemento-ossifying fibroma
- ♦ Giant cell lesions:
 - Cherubism
 - Central giant cell granuloma
- ♦ Paget's disease
- ♦ Osteopetrosis

3.09 Soft Tissue Calcifications - chapter 28

General clinical and radiographic features of:

- ♦ Dystrophic calcifications:
 - Calcified lymph nodes
 - Dystrophic calcification in the tonsils
 - Calcified blood vessels (carotid arteriosclerosis)
- ♦ Idiopathic calcification:
 - Salivary sialolith
 - Phleboliths
- ♦ Metastatic calcification
- ♦ Heterotopic calcification:
 - Ossification of stylohyoid ligament
 - Myositis ossificans

3.10 Systemic diseases manifested in the jaws - chapter 25

- ♦ Endocrine disorders
 - Hyperparathyroidism
 - Hypoparathyroidism
 - Hyperthyroidism
 - Hypothyroidism
 - Diabetes mellitus
- ♦ Metabolic bone diseases
 - Osteoporosis
 - Rickets and osteomalacia
 - Osteopetrosis
- ♦ Other systemic diseases
 - Sickle cell anemia
 - Thalassemia

3.11 Temporomandibular joint (TMJ) disorders and imaging- chapter 26

- Radiographic ***anatomy*** of the TMJ

- Diagnostic ***imaging*** of the TMJ

- ♦ Hard tissue imaging
 - Panoramic and automatic double TMJ program
 - Conventional tomography
 - Computed tomography and cone beam computed tomography
- ♦ Soft tissue imaging
 - MRI

- ***Abnormalities*** of the TMJ

- ♦ Developmental abnormalities (bony)
 - Condylar hyperplasia and hypoplasia
 - Coronoid hyperplasia
 - Bifid condyle
- ♦ Soft tissue abnormalities
 - Disk displacement with reduction
 - Disk displacement without reduction

- Disk perforation and deformities
- ◆ Remodeling
- ◆ Arthritic disorders
 - Osteoarthritis
 - Rheumatoid arthritis
- ◆ Trauma:
 - Dislocation
 - Fractures
 - Ankylosis

3.12 Salivary gland diseases and imaging- chapter 31

- ◆ Anatomy
- ◆ Diagnostic imaging
 - Plain film radiography
 - Intraoral radiography (periapical, occlusal)
 - Extraoral radiography (lateral oblique)
 - Indications, contra-indications, limitations, and appearance of:
 - Conventional sialography
 - CT
 - MRI
- ◆ Definition, clinical features, radiographic appearance, and differential diagnosis of:
 - Sialolithiasis,
 - Autoimmune sialadenitis (Sjogren's syndrome)
- ◆ Radiographic appearance of benign and malignant tumors of the salivary glands.

3.13 Maxillary sinus diseases and imaging- chapter 27

- ◆ Review of normal development, anatomy, functions, and diagnostic imaging.
- ◆ Definition, clinical features, radiographic appearance and differential diagnosis of:
 - Inflammatory changes (thickened mucous membrane, sinusitis, empyema, polyps)
 - Antrolith

- Mucous retention cyst
- Mucocele
- Odontogenic cyst
- Benign neoplasms
- Malignant neoplasms (squamous cell carcinoma)

5.0 **Evaluation and Grades:**

Activity		Marks	
First Semester			
1st CAT (written)		15	
2nd CAT (written)		15	
Second Semester			
Clinical Requirements	1 case of 20 CMS radiographic taking	5	17
	Evaluation of 20 CMS radiographic taking	2	
	Report writing for 2 assigned 20 CMS cases	4	
	1 panoramic radiographic taking	2	
	Evaluation of panoramic radiographic taking	2	
	Report writing for 1 assigned panoramic	2	
1 Case Presentation		5	
8 Case presentation Quizzes		8	
Final clinical exam		40	
Total		100	

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Lectures Schedule

First Semester (2013-2014)

Week	Topic	Lecturer	Date
1	Introduction	Al-Ekrish	3 - 9 – 2013
2	Sectional anatomy of the oral & maxillofacial structures	Al-Ekrish	10 - 9 – 2013
3	Inflammation lesions of the jaws	Al-Faleh	17 - 9 – 2013
4	Odontogenic and non-odontogenic cysts	Al-Ekrish	24 - 9 – 2013
5	Benign odontogenic tumors	Al-Shawaf	1- 10 – 2013
6	Benign non- odontogenic tumors	Al-Ekrish	8 - 10 – 2013
HAJJ VACATION			
7	Malignant tumors	Al-Shawaf	22 - 10 – 2013
8	Soft tissue calcifications	Al-Faleh	29 - 10 – 2013
9	First continuous assessment exam	Staff	19 - 11 – 2013
10	Trauma to the facial structures	Al-Ekrish	5- 11 – 2013
11	Bone diseases with jaw manifestations	Al-Faleh	12- 11 – 2013
12	Systemic diseases manifested in the jaws	Al-Ekrish	26 - 11– 2013
13	Temporomandibular joint imaging and disorders	Al-Ekrish	3 - 12 – 2013
14	Salivary glands imaging and disorders	Al-Shawaf	10 - 12 – 2013
15	Maxillary sinus disease and imaging	Al-Ekrish	17 - 12 – 2013
Second continuous assessment exam		Staff	24- 12 – 2013

Practical Exercise Schedule Second Semester (2013-2014)

Week	Group A	Group B	Group C	Group D	Date
1	Panoramic Report Demonstration				28 - 1 – 2014
2	Introduction to Radiological Differential Diagnosis and Case Presentation: Detailed Description of a Jaw Lesion				4 - 2 – 2014
3	Clinic 1	Case Presentation 1	Assigned Case Reporting		11 - 2 – 2014
4	Assigned Case Reporting	Clinic 1	Case Presentation 1	Assigned Case Reporting	18 - 2– 2014
5	Assigned Case Reporting		Clinic 1	Case Presentation 1	25 - 2 – 2014
6	Case Presentation 1	Assigned Case Reporting		Clinic 1	4 - 3 – 2014
7	Clinic 2	Case Presentation 2	Assigned Case Reporting		11- 3 – 2014
8	Assigned Case Reporting	Clinic 2	Case Presentation 2	Assigned Case Reporting	18 - 3 – 2014
Mid-semester vacation					
9	Assigned Case Reporting		Clinic 2	Case Presentation 2	1 - 4 – 2014
10	Case Presentation 2	Assigned Case Reporting		Clinic 2	8 - 4 – 2014
11	Makeup Clinical Session		Assigned Case Reporting		15 - 4– 2014
12	Assigned Case Reporting		Makeup Clinical Session		22 - 4 – 2014
13	Makeup Clinical Session		Assigned Case Reporting		29 - 4 – 2014
14	Assigned Case Reporting		Makeup Clinical Session		6- 5 – 2014
15	Formative Assessment				13 - 5 – 2014
Final Exam					To be determined

Clinic: Venue- OMF Radiology Clinic (Requirements: one 20 CMS case and one panoramic radiograph taken on a patients)

Assigned Case Reporting: Venue- Interpretation Room (Requirements: report writing of two assigned 20 CMS cases and one assigned panoramic case).

Case Presentation: Venue- Classroom (Requirements: 1 case presentation and weekly quizzes).