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 & Oral and Maxillofacial Radiology

Academic Year: 2013-2014

Course Director (DUC): Ra’ed Al Sadhan- Associate Professor, OMF Radiology

Course Contributor (DUC): Dr. Hazem Marzouq- Assistant Professor, OMF Radiology

Email: rsadhan@ksu.edu.sa

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:


3. Suggested reading:

Differential Diagnosis of Oral Lesions (section on bony lesions). By Wood and Goaz.
4. **Recommended Web Links:**

- **Oral Radiographic Differential Diagnosis (ORAD II):**
  [http://www.orad.org/index.html](http://www.orad.org/index.html)

- **Marcilan Maxillofacial Radiology:**
  [http://www.marcilan.com](http://www.marcilan.com)

- **European Academy of Dentomaxillofacial Radiology:**

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:**


3.03 **Odontogenic and Non-odontogenic Cysts- Ch 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- Ch 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- Ch 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- Ch 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
3.07 Trauma to the Facial Structures- Ch 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- Ch 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 - Ch 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
- Heterotropic calcification:
  - Ossification of stylohyoid ligament
  - Myositis ossificans
3.10 **Systemic Diseases Manifested in the Jaws - Ch 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 **Tempromadibular Joint (TMJ) Disorders and Imaging- Ch 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
3.12 Salivary Gland Diseases and Imaging- ch 31

- Arthritic disorders
  - Osteoarthritis
  - Rheumatoid arthritis
- Trauma:
  - Dislocation
  - Fractures
  - Ankylosis

- Anatomy
- Diagnostic imaging
  - Plain film radiography
    - Intraoral radiography (periapical & occlusal)
    - Extraoral radiography (lateral oblique)
  - Indications, contraindications, 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- Ch 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)
### Evaluation and Grades:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
</tr>
<tr>
<td>1st CAT (written)</td>
<td>15</td>
</tr>
<tr>
<td>2nd CAT (written)</td>
<td>15</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clinical Requirements</th>
<th>Marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 case of 20 CMS radiographic taking</td>
<td>5</td>
</tr>
<tr>
<td>Evaluation of 20 CMS radiographic taking</td>
<td>2</td>
</tr>
<tr>
<td>Report writing for 2 assigned 20 CMS cases</td>
<td>4</td>
</tr>
<tr>
<td>1 panoramic radiographic taking</td>
<td>2</td>
</tr>
<tr>
<td>Evaluation of panoramic radiographic taking</td>
<td>2</td>
</tr>
<tr>
<td>Report writing for 1 assigned panoramic</td>
<td>2</td>
</tr>
<tr>
<td>Case Presentations</td>
<td>13</td>
</tr>
<tr>
<td>Final Clinical Exam</td>
<td>40</td>
</tr>
</tbody>
</table>

**Total** 100
# DDS 343- Oral and Maxillofacial Radiology

## Lectures Schedule

### First Semester (2013-2014)

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Lecturer</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Dr. Al-Sadhan</td>
<td>3 - 9 – 2013</td>
</tr>
<tr>
<td>2</td>
<td>Sectional Anatomy of the Oral &amp; Maxillofacial Structures</td>
<td>Dr. Al-Sadhan</td>
<td>10 - 9 – 2013</td>
</tr>
<tr>
<td>3</td>
<td>Inflammation Lesions of the Jaws</td>
<td>Dr. Al-Sadhan</td>
<td>17 - 9 – 2013</td>
</tr>
<tr>
<td>4</td>
<td>Odontogenic and Non-odontogenic Cysts</td>
<td>Dr. Al-Sadhan</td>
<td>24 - 9 – 2013</td>
</tr>
<tr>
<td>5</td>
<td>Benign Odontogenic Tumors</td>
<td>Dr. Al-Sadhan</td>
<td>1 - 10 – 2013</td>
</tr>
<tr>
<td>6</td>
<td>Benign Non-Odontogenic Tumors</td>
<td>Dr. Al-Sadhan</td>
<td>8 - 10 – 2013</td>
</tr>
<tr>
<td></td>
<td><strong>HAJJ VACATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Malignant Tumors</td>
<td>Dr. Marzouq</td>
<td>22 - 10 – 2013</td>
</tr>
<tr>
<td>8</td>
<td>Soft Tissue Calcifications</td>
<td>Dr. Marzouq</td>
<td>29 - 10 – 2013</td>
</tr>
<tr>
<td>9</td>
<td><strong>First Continuous Assessment Exam</strong></td>
<td>Staff</td>
<td>19 - 11 – 2013</td>
</tr>
<tr>
<td>10</td>
<td>Trauma to the Facial Structures</td>
<td>Dr. Al-Sadhan</td>
<td>5 - 11 – 2013</td>
</tr>
<tr>
<td>11</td>
<td>Bone Diseases with Jaw Manifestations</td>
<td>Dr. Marzouq</td>
<td>12 - 11 – 2013</td>
</tr>
<tr>
<td>12</td>
<td>Systemic Diseases Manifested in the Jaws</td>
<td>Dr. Al-Sadhan</td>
<td>26 - 11 – 2013</td>
</tr>
<tr>
<td>13</td>
<td>TMJ Imaging &amp; Disorders</td>
<td>Dr. Al-Sadhan</td>
<td>3 - 12 – 2013</td>
</tr>
<tr>
<td>14</td>
<td>Salivary Glands Imaging &amp; Disorders</td>
<td>Dr. Al-Sadhan</td>
<td>10 - 12 – 2013</td>
</tr>
<tr>
<td>15</td>
<td>Maxillary Sinus Disease &amp; Imaging</td>
<td>Dr. Al-Sadhan</td>
<td>17 - 12 – 2013</td>
</tr>
<tr>
<td></td>
<td><strong>Second Continuous Assessment Exam</strong></td>
<td>Staff</td>
<td>24- 12 – 2013</td>
</tr>
</tbody>
</table>
# Practical Exercise Schedule
## Second Semester (2013-2014)

<table>
<thead>
<tr>
<th>Week</th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
<th>Group D</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Panoramic Report Demonstration</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Introduction to Radiological Differential Diagnosis and Case Presentation: Detailed Description of a Jaw Lesion</td>
</tr>
<tr>
<td>3</td>
<td>Clinic 1</td>
<td>Case Presentation 1</td>
<td>Assigned Case Reporting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Assigned Case Reporting</td>
<td>Clinic 1</td>
<td>Case Presentation 1</td>
<td>Assigned Case Reporting</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Assigned Case Reporting</td>
<td>Clinic 1</td>
<td>Case Presentation 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Case Presentation 1</td>
<td>Assigned Case Reporting</td>
<td></td>
<td>Clinic 1</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Clinic 2</td>
<td>Case Presentation 2</td>
<td>Assigned Case Reporting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Assigned Case Reporting</td>
<td>Clinic 2</td>
<td>Case Presentation 2</td>
<td>Assigned Case Reporting</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Mid-semester vacation</strong></td>
</tr>
<tr>
<td>9</td>
<td>Assigned Case Reporting</td>
<td></td>
<td>Clinic 2</td>
<td>Case Presentation 2</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Case Presentation 2</td>
<td>Assigned Case Reporting</td>
<td></td>
<td>Clinic 2</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Makeup Clinical Session</td>
<td></td>
<td>Assigned Case Reporting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Assigned Case Reporting</td>
<td></td>
<td>Makeup Clinical Session</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Makeup Clinical Session</td>
<td></td>
<td>Assigned Case Reporting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Assigned Case Reporting</td>
<td></td>
<td>Makeup Clinical Session</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Formative Assessment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Final Exam</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>To be determined</strong></td>
</tr>
</tbody>
</table>

**Clinic:** Requirements: one 20 CMS case and one panoramic radiograph taken on a patient.

**Assigned Case Reporting:** Requirements: report writing of two assigned 20 CMS cases and one assigned panoramic case.

**Case Presentation:** Requirements: 2 case presentations.