



King Saud University
College of Dentistry
Department of Restorative Dental Sciences
Division of Endodontics

COURSE OUTLINE

423 RDS

CLINICAL ENDODONTICS

FOURTH YEAR

Course Director:

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Credit Hours: *Three (3) credit hours*

Academic year 1435-1436H (2014-2015G)

A. Learning outcomes:

Goal:

To train students to perform clinical aspects of endodontic therapy with emphasis on integrating clinical and biological principles. The students will be trained to treat endodontically involved anterior and posterior teeth. In addition, they will be trained to manage endodontic emergencies.

Course Objectives:

At the completion of 423 RDS, students should be able to:

1. Be familiar with all endodontic forms used in the clinic.
2. Develop a systematic approach to the diagnosis of endodontic pain.
3. Organize clinical findings, symptoms and pain history to determine a diagnosis.
4. Develop diagnostic tests to determine pulp vitality (cold test, EPT and others).
5. Diagnose, plan and deliver routine non-surgical endodontic treatment to patients with pulpal and periradicular disease.
6. Clinically record the status of pulpal and periradicular tissues through clinical and radiographic examinations.
7. Be familiar with major pulpal and periradicular pathology and their signs and symptoms.
8. Develop a differential diagnosis between endodontic and periodontal disease.
9. Develop a differential diagnosis between endodontic and non-endodontic disease.
10. Take necessary radiographs to interpret osseous changes related to pulpal and periradicular pathology.
11. Select or differentiate cases for treatment or referral based on knowledge, experience and difficulty.
12. Determine the prognosis for endodontically treated teeth and the possibility of endodontic surgery.

13. Identify the need for appropriate adjunctive procedures subsequent to endodontic therapy.
14. Refer the case for final restoration.
15. Be aware of the value of post-operative follow-up (recall) and the possibility of performing root canal re-treatment

B. Course Components:

423 RDS is a Lecture and Clinical course where students have to recognize, diagnose, and treat pulpally involved teeth. In addition, students have to relate endodontics to various dental disciplines.

I. Didactics: Topics to be Covered		
Topic	No of Weeks	Contact hours
I. The Science of Endodontics: I.1. Clinical diagnostic procedure. I.2. Management of endodontic emergencies.	2	2
II. Endodontic Treatment Procedure: II.1. Endodontic treatment procedure I. II.2. Endodontic treatment procedure II. II.3. Endodontic treatment procedure III.	3	3
III. The Role of Filled Tooth: III.1. Non-surgical retreatment. III.2. Periradicular surgery.	2	2
IV. The Role of Endodontics after Dental Traumatic Injuries. ▪ Classification, examination, and clinical management of dental trauma.	1	1
V. Endodontology with Interdisciplinary Treatment Approach: V.1. Restoration of endodontically treated tooth. V.2. Endodontic and periodontal interrelationships. V.3. Discoloration, bleaching and laser.	3	3
VI. Prognosis of Root Canal Therapy ▪ Determine the success and failure.	1	1
VI. Regenerative Endodontics	1	1

II. Course Components (hours per year)	
Lecture	Practical
13	90

It is expected that each student will: Attend all lectures and clinical sessions. Absences will be looked upon with disfavor and it will be reported to the **administration when it reaches 25%**.

III. Clinical Requirements

The following **minimum requirements must** be completed:

- a. Two anterior teeth.
- b. Two premolars; one with single canal and the other with two canals.
- c. Two molars; one upper and one lower molar. **Third molar teeth should not be treated.**
- d. A retreatment case. Tooth should be with 1 or 2 canals. This will be considered as both a retreatment case and one of the above requirements.
- e. Two recall cases, with a **minimum of 3 months** passed from treatment, and they **must be restored.**

Clinical competency examination:

Complete root canal therapy for **single rooted "single-canal" virgin anterior or premolar tooth which has to be done in single visit.** The student will select the case and decide the session for examination. The course director and one of 423 RDS clinical instructors will evaluate the case. **If the student did not pass the exam, she will have a chance to redo it however, her second evaluation will be out of 15.** To pass this course the student should pass this exam. **If the student fails to complete her competency exam in single visit three marks from her total evaluation will be deducted and it has to be done in the next visit.**

**Virgin = Not endodontically treated before or initiated*

N.B:

- **50% of the requirements must be cleaned and shaped by rotary instruments**
- **Root canal treatment on one upper or lower molar tooth has to be on a virgin tooth.**
- **No rubber dam isolation = failure.**
- **No instructor's permission / sign = 0 + suspension.**
- **Tracing wrong tooth = 0 + suspension.**

- Preventive endodontic therapy and management of deep carious lesions (**CARIES CONTROL**), and pulpectomy procedures approved by the instructor are considered as part of the endodontic treatment.

C. Course Materials

- Required Text
 - Principles & Practice of Endodontics 4th ed. by: Walton & Torabinejad.
- Essential References
 - Pathways of the pulp 10th ed. By: Hargreaves and Cohen.
 - Endodontics 6th ed. by: Ingle, Bakland and Baumgartner.

D. Assignments and Evaluation

Evaluation			
Assessment	Assessment task	Week due	Proportion of Final Assessment
1	Quiz #1, 2,3	3,6,13	5%
2	Midterm written exam	9	10%
3	Final written exam	16	20%
4	Case presentation	Second semester (first 2 clinical sessions)	5%
5	Clinical exam	Any clinical session	20%
6	Clinical case assessments	Per finished case	40%
Total			100%

LECTURE SCHEDULE

Week	Date	Title	Faculty
1	Aug 31t, 2014	Introduction	Dr. K. Almanei
2	Sep 7, 2014	Clinical diagnostic procedure	Dr. K. Almanei
3	Sep 14, 2014	Endodontic treatment procedure I <i>Quiz #1</i>	Dr. K. Almanei
4	Sep 21, 2014	Endodontic treatment procedure II	Dr. K. Almanei
---	Sep 28 & Oct 5, 2014	Hajj Vacation	-----
5	Oct 12, 2014	Endodontic treatment procedure III	Dr. K. Almanei
6	Oct 19, 2014	Restoration of endodontically treated tooth <i>Quiz #2</i>	Dr. K. Almanei
7	Oct 26, 2014	Non-surgical retreatment	Dr. S. Alsubait
8	Nov 2, 2014	Management of endodontic emergencies	Dr. H. Balto
9	Nov 9, 2014	<i>Midterm Exam</i>	Dr. K. Almanei
10	Nov 16, 2014	The Role of Endodontics after Dental Traumatic Injuries	Dr. R. Alsulaimani
11	Nov 23, 2014	Periradicular surgery	Dr. S. Alsubait
12	Nov 30, 2014	Endodontic and periodontal interrelationships	Dr. S. Basoudan
13	Dec 7, 2014	Discoloration and bleaching <i>Quiz #3</i>	Dr. S. Basoudan
14	Dec 14, 2014	Prognosis of Root Canal Therapy	Dr. S. Basoudan
15	Dec 21, 2014	Regenerative Endodontics	Dr. K. Almanei
16	Dec 28, 2014	Final Exam	-----

LECTURE OUTLINE AND LEARNING OBJECTIVES

1) Introduction

- a) Review of objectives and requirements of the course.
- b) Introduction to all endodontic forms to be used in the clinic.
- c) Documentation of procedures and treatment.
- d) Clinical Protocol.

2) Clinical Diagnostic Procedures

- a) Chief complaint, medical and dental history.
- b) Examination and testing.
 - ✓ Pulp test
 - ✓ Special test
 - ✓ Radiographic examination and interpretation.
 - ✓ Root fracture
 - ✓ Referred pain
- c) Clinical classification of pulpal and periradicular diseases.
- d) Treatment planning and case selection.

3) Clinical Endodontics I

- a) patient preparation.
- b) preparation of radiographs.
- c) Preparation for access: Tooth isolation.

4) Clinical Endodontics II

- a) Access cavity preparation.
 - ✓ Objective and guidelines for access cavity preparation.
 - ✓ Mechanical phases of access cavity preparation.
 - ✓ Error in access cavity preparation.
 - ✓ Morphology and access cavity preparation for individual teeth.
- b) Length determination.
 - ✓ Radiographic
 - ✓ Electronic apex locator.

5) *Clinical Endodontics III*

- a) Cleaning and shaping of root canal system
- b) Obturation of the cleaned and shaped root canal system
- c) Temporization of endodontically treated tooth.

6) *Restoration of endodontically treated tooth*

- a) Special features of endodontically treated teeth.
- b) Restorative materials and options.
- c) Pretreatment evaluation and treatment strategy.

7) *Nonsurgical Retreatment*

- a) Etiology of posttreatment disease.
- b) Diagnosis of posttreatment disease.
- c) Treatment planning.
- d) Nonsurgical endodontic retreatment.

8) *Management of Endodontic Emergencies*

- a) Emergency classifications.
- b) Emergency endodontic management.
- c) Analgesics and antibiotics.
- d) Cracked and fractured teeth.

9) *The Role of Endodontics After Dental Traumatic Injuries*

- a) Classification – World Health Organization.
- b) Radiographic examination.
- c) Clinical management.
- d) Follow-up after dental trauma.

10) *Periradicular Surgery*

- a) Indications for periradicular surgery.
- b) Periradicular surgery.
- c) Postoperative care.

11) Endodontic and Periodontal Interrelationships

- a) Influence of pulpal pathologic condition on the periodontium.
- b) Influence of periodontal inflammation on the pulp.
- c) Differential diagnosis.
- d) Treatment alternatives.

12) Discoloration and Bleaching

- a) Causes of tooth discoloration.
- b) Contraindications to bleaching.
- c) Methods of bleaching discolored teeth:
- d) Veneering discolored teeth.

13) Prognosis of Root Canal Therapy

- a) Describe the importance of recall.
- b) Describe modalities used to determine success and failure.
- c) Factors determine success and failure.
- d) Identify causes other than endodontic that may lead to failure.

14) Regenerative Endodontics

- a) Overview of Regenerative Endodontics
- b) Summary of Basic Research on Regenerative Endodontics
- c) Clinical Procedures Related to Regenerative Endodontics