

Faculty of Oral & Dental Medicine

Diagnosis & Radiology

Information :

Course Code : MPDR 431

Level : Undergraduate

Course Hours : 3.00- Hours

Department : Faculty of Oral & Dental Medicine

Instructor Information :

| Title | Name | Office hours |
|---------------------|--|--------------|
| Associate Professor | Nora Saif Elnasr Hamdy Abd Elkhalek Taha | 22 |
| Associate Professor | Dina Fahim Abdel Rahim Ahmed | 3 |
| Lecturer | Doaa Ahmed Fouad Ahmed Hamed | 0 |
| Assistant Lecturer | Rana Mohamed Ashrf Hazem Ibrahim | 16 |
| Assistant Lecturer | Mona Ahmad Saeed Mokhtar Mohamed Nour | 4 |
| Assistant Lecturer | SARA ZAKARIA FAHIM FANOS | 4 |
| Teaching Assistant | Dina Nasser Tawfik Mahmoud Gibriel | 10 |
| Teaching Assistant | Ehab Raafat Nasr Hassan | |
| Teaching Assistant | Ahmed Ragheb Ahmed Ragheb Hassan | |

Area Of Study :

1. To provide the students with basic information related to X-ray nature, production, equipments and materials used in the process of radiography.
2. To demonstrate and train students to perform all intra oral radiographic examination in terms of exposing, processing, and handling radiographs.
3. To enable the students to interpret radiographic images used in the dental profession.
4. To appreciate safety procedures to avoid hazards to themselves, to the patients and to the environment.

Description :

Physics of radiology, protection from hazards, Radiographic Techniques, Anatomical Landmarks, Occlusal and Panoramic Radiographs, Radiation Positions, x -ray film Processing, periapical lesions, periodontal diseases, interpretation of radiograph.

Course outcomes :

a. Knowledge and Understanding :

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| 1 - | understand, radiation physics, including X-rays production, different components of X-ray machine and the various properties of X-rays |
| 2 - | Discuss how images are produced and identify different image characteristics as density, contrast, sharpness and resolution. Illustrate all factors affecting these characteristics. |
| 3 - | Identify types of radiographic films by size, number and speed (intra-oral and extra-oral). Explain the underlying principles of the use of screens and discuss its different types and structure. |
| 4 - | Explain the principles of all the intra oral radiographic techniques |

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| 5 - | 5- Recognize how images are produced by processing and describe different processing techniques and chemicals. |
| 6 - | Understand the digital radiography systems and their advantages and uses. |
| 7 - | Explain the principles of extra-oral radiographic techniques and understand their indications. |
| 8 - | Recognize and identify different radiographic pitfalls, their causes and method of overcome. |
| 9 - | Recognize, identify and list anatomical landmarks related to various intra-oral and extra-oral radiographs. |
| 10 - | Discuss major principles of radiation biology, doses, and methods of protection with special emphasizes on the ALARA concept |
| 11 - | Discuss the methodological approach and principles of radiographic interpretation and description of lesions. |
| 12 - | Recognize and describe different carious lesions and radiographic methods of their evaluation. |
| 13 - | Recognize and describe different periodontal lesions and radiographic methods of their evaluation |

b. Intellectual Skills: :

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| 1 - | Make decisions regarding proper radiographic prescription. |
| 2 - | Formulate complete radiographic report for intraoral CMS, panoramic and extra oral radiographs. |

c. Professional and Practical Skills: :

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| 1 - | Apply their knowledge and skills in radiographic techniques and processing to acquire excellent diagnostic quality radiographs |
| 2 - | Complete full mouth periapical, bitewing, and occlusal survey images (CMS) for adults and children. |
| 3 - | Perform different extra-oral radiographic techniques by applying proper principles and interpretation |
| 4 - | Appreciate normal radiographic anatomy and variations as well as common dental pathology seen on intraoral radiographs |
| 5 - | Learn the radiographic interpretation basics to enhance diagnostic skills and also on extra-oral radiography, panoramic radiography and digital radiography. |
| 6 - | Identify different radiographic carious lesions. |
| 7 - | Perform radiographic assessment means of different periodontal lesions. |
| 8 - | Interpret radiographs of some teeth-related syndromes, as well as traumatic injuries of teeth and jaws. |

d. General and Transferable Skills: :

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| 1 - | Demonstrate appropriate professional attitudes and behavior in different situations toward patients, colleagues and supervisors. |
| 2 - | Provide empathic care for all patients without discrimination. |
| 3 - | Regularly assess one's knowledge and skills, and seek additional information to correct deficiencies and enhance performance. |
| 4 - | Implement and monitor infection control and environmental safety programs according to current standards. |

Course Topic And Contents :

| Topic | No. of hours | Lecture | Tutorial / Practical |
|----------------------|--------------|---|---|
| physics of radiation | 4 | Introduction to the course Nature and types of | X ray machine accessories Image characters |

Course Topic And Contents :

| Topic | No. of hours | Lecture | Tutorial / Practical |
|---|--------------|---|--|
| principles of image production | 4 | Dental film | Processing Demo processing |
| dental radiography equipment | 4 | IO techniques (periapical) | Demo IO techniques Infection control |
| intraoral radiographic techniques | 4 | AO techniques (bitewing and occlusal) Object I | Periapical upper and lower central |
| object localization techniques | 4 | AO landmarks (mandible and maxilla) | Periapical upper and lower canine |
| image processing | 4 | EO views EO landmarks | Periapical upper and lower molars |
| common radiographic pitfalls and artifacts | 4 | Panoramic radiography (principle, technique and | Common technique and processing errors |
| radiation protection | 4 | Alternative and specialized imaging modalities | Demonstration on panoramic and cephalometric mac |
| Radiographic normal anatomical landmarks | 4 | Alternative and specialized imaging modalities (c | Dosimetry Biological effects of radiation |
| extra-oral radiographic techniques, indications, and normal anatomy | 4 | Principles of interpretation Description of a | Bitewing premolars and molars |
| panoramic radiography | 4 | Caries | Processing of requirements |

Course Topic And Contents :

| Topic | No. of hours | Lecture | Tutorial / Practical |
|---|---------------------|--|--|
| Principles of radiographic interpretation | 4 | <ul style="list-style-type: none"> ~Á Periodontal diseases ~Á Periapical lesions | Processing of requirements |
| Interpretation of radiographs in periodontal disease | 4 | Traumatic injuries | Writing radiographic report (caries, periapical, P |
| Interpretation of radiographs in various dental anomalies | | | |
| traumatic injuries | | | |

Teaching And Learning Methodologies :

4-1 Lectures by PPS presentations

4-2 Open . Á discussion lectures

4-3 Clinical training: ~Á Demonstrations and videos ~Á Case studies and reports ~Á Work sheets and surveys ~Á Report back sessions

Course Assessment :

| Methods of assessment | Relative weight % | Week No | Assess What |
|------------------------------|--------------------------|----------------|---|
| 1st Mid-term Examinations | 15.00 | 6 | assess knowledge and understanding |
| 2nd Mid-term Examinations | 15.00 | 11 | assess knowledge and understanding |
| Final written Examination | 25.00 | 15 | to assess knowledge and understanding |
| Oral Examination | 10.00 | 15 | assess knowledge and understanding, and personal conduct. |
| Practical Examination | 15.00 | 14 | assess practical skills |
| Semester Work | 20.00 | | |

Course Notes :

Hand out : available for students from the department

Recommended books :

Essentials of dental radiography and radiology, Eric Waites