



Jordan University of Science and Technology
Faculty of Applied Medical Sciences
Allied Dental Sciences Department

ADS341 Radiology1

First Semester 2021-2022

Course Catalog

1 Credit Hours. Study of the nature and production of x-rays and basic principles and procedures in oral radiology. Emphasis is on radiation physics, radiation biology radiation protection, basic intraoral radiographic techniques, and image processing and mounting procedures. This course will be held as hybrid a synchronic 1:1, one group (A+B) will attend the lecture in-class room physically, while the other group (C+D) will have it as on-line (recorded lecture), and the following week vise versa. Discussion may take place either online or in class room. The lectures will be given using power point presentations, reading assignments, recorded videos.

Text Book

Title	Essentials of Dental Radiography for Dental Assistants and Hygienists
Author(s)	Evie M Thomson
Edition	10th Edition
Short Name	primary
Other Information	Pearson/Prentice Hall

Course References

Short name	Book name	Author(s)	Edition	Other Information
secondary	Radiographic Interpretation for the Dental Hygienist	JI Haring, LJ Lind	9th Edition	WB Saunders Co.

Instructor

Name	Miss Arwa Mahasneh
Office Location	-
Office Hours	
Email	ammahasneh@just.edu.jo

Class Schedule & Room
Section 1: Lecture Time: Sun : 11:30 - 12:30 Room: N4206

Prerequisites		
Line Number	Course Name	Prerequisite Type
921031	PHY103 General Physics	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Orientation to course ADS341	
Week 2	I. Historical perspective II. Radiographic film A. Composition B. Latent image formation C. Classifications D. Types of projections E. Care and storage	
Week 3	II. Bitewing radiographs A. Assessment of radiographic need B. Packet placement C. Vertical angulation D. Horizontal angulation A. Centering the film in the beam B. Film Processing components of the x-ray unit	
Week 4	IV. Periapical radiographs A. Introduction to bisecting and Paralleling techniques B. Packet placement C. Vertical angulation D. Horizontal angulation E. Centering the film in the beam	
Week 5	V. Radiation physics A. Types of radiation B. Characteristics of x-rays C. Sources of radiation exposure	
Week 6	LECTURE VII Production of x-rays A. Requirements for controlled production B. Processes 1.General/bremsstrahlung 2. Characteristic C. Basic interaction with matter 1. Coherent 2. Photoelectric 3. Compton	
Week 7	VIII. Radiation biology A. Ionization B. Theories 1. Direct 2. Indirect C. Factors influencing a biological response D. Dose response curves E. Risk estimates and comparisons	
Week 8	midterm exam	
Week 9	LECTURE IX. Film mounting X. Recognition of normal radiographic anatomy A. Radiographic appearance of teeth and supporting bone B. Radiographic anatomy of the maxilla C. Radiographic anatomy of the mandible	
Week 10	Film mounting Part two. Recognition of normal radiographic anatomy A. Radiographic appearance of teeth and supporting bone B. Radiographic anatomy of the maxilla C. Radiographic anatomy of the mandible	
Week 11	Technique, processing, and handling errors that compromise diagnostic quality	
Week 12	Technique, processing, and handling errors that compromise diagnostic quality part two	

Week 13	Quality Assurance and radiation protection Part one	
Week 14	Cone beam- guest speaker	
Week 15	catch up and revision	
Week 16	Finals	

Mapping of Course Outcomes to Program Student Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Identify radiation risk factors the population and advocate the need for requirements for controlled x-ray production based on knowledge of radiation biology	10%	
Assume responsibility and accountability for radiographic services by demonstrating safe operation of dental x-ray equipment based on knowledge of radiation physics	10%	
Understand the principles of placing, exposing, processing, mounting, and critique for acceptability, bitewing and periapical radiographs	10%	
Provide individualized care to the client by selecting the appropriate radiographic projection, recognizing the advantages, disadvantages and limitations of each type	10%	
explain techniques and utilize radiographic equipment which will provide clients with the maximum radiation protection	10%	
Interpret an intraoral dental radiograph based on knowledge of the radiographic appearance of the tooth, tooth development, and supporting anatomical structures	20%	
Incorporate intraoral photography into client assessment	10%	
Evaluate and implement engineering controls and work practices in the darkroom for the purposes of infection control and ergonomics	10%	
Assess, plan, implement, and evaluate quality assurance mechanisms for obtaining diagnostic radiographic imaging	10%	

Evaluation	
Assessment Tool	Weight
Midterm Exam	50%
final exam	50%

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