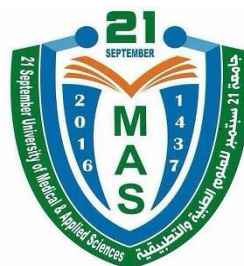


Republic of Yemen
Ministry of Education & Higher Research
Council of Academic Accreditation & Quality Assurance of
Higher Education (CAQA)



**21 septamber University of Medical
and Applied Science**



Faculty of Applied Medical Science

Department of **Medical Radiology and Imaging Technology**

Program of Radiologic Technology and Medical Imaging

Course Specification of
Radiographic Film Interpretation
Course Code. (____)

2024



T4: This Template is Developed and Approved by CAQA-Yemen, 2023

Prepared by:

Reviewed by:

Dr. -----

Head of the Department:

Dr. Awadh Al-Kubati

Quality Unit:

Dr. Mohammed
Al-shamahi

Dean:

Dr. Abdulsalam
Dalaq

I. General Information:

1.	Course Title:	Radiographic Film Interpretation				
2.	Course Code:					
3.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours	
			Lecture	Tutorial/ Seminar	Lab	Clinical
		2	2	--	--	--
4.	Level/ Semester at which this Course is offered:	4 th Level / 2 nd Semester				
5.	Pre –Requisite (if any):	Radiographic technique I&II, Radiologic Equipment 1&2				
6.	Co –Requisite (if any):	None				
7.	Program (s) in which the Course is Offered:	Bachelor of Radiologic Technology and Medical Imaging				
8.	Language of Teaching the Course:	English				
9.	Location of Teaching the Course:	Faculty of Applied Medical Science				
10.	Prepared by:					
11.	Date and Number of Approval by Council:					

II. Course Description:

This course focuses on developing students' theoretical knowledge in interpreting radiographic films to assess anatomical structures and recognize pathological conditions. Emphasis is placed on understanding radiographic signs, image quality, and diagnostic patterns related to common clinical conditions. The course aims to equip students with the skills necessary to analyze radiographs critically, correlate findings with clinical contexts, and enhance their understanding of radiographic anatomy and pathology.

III. Course Intended Learning Outcomes (CILOs) : Upon successful completion of the course, students will be able to:		Referenced PILOs		
A. Knowledge and Understanding:		I, P or M/A		
a1	Understand principles and techniques of radiographic film interpretation.	M	A2	Explanation of the principles and procedures of medical imaging acquisitions, medical imaging technique, and Radiological Technology Sciences as well as patient positioning in computed radiography and MRI technique.
a2	Recognize radiographic signs and patterns of normal and abnormal anatomy.	M	A1	Demonstrate an understanding of fundamental knowledge of Biomedical sciences (Biology, Biophysics, Anatomy, Physiology, Sectional anatomy and medical imaging technique).
B. Intellectual Skills:				
b1	Analyze radiographic images to identify potential abnormalities and pathologies.	M	B3	Analyze and evaluate evidence-based information needed in medical imaging practice.
b2	Correlate radiographic findings with clinical scenarios for diagnostic conclusions.	M	B1	Assess the radiation exposure times and intensity of exposure to guarantee the imaging technique is accurate to reduce the risk factors and adapt to patient needs.
C. Professional and Practical skills:				
c1	-			-
c2	-			-
D. Transferable Skills:				
d1	Communicate radiographic findings effectively in written formats.	A	D1	Communicate effectively with clinicians, patients, and support staff.

d2	Apply critical thinking to interpret complex radiographic cases.	A	D3	Recognize the need to obtain further education in the pursuit of life-long learning.
I= Introduced, P=Practiced or M/A= Mastered/Advanced				

(A) Alignment of Course Intended Learning Outcomes (Knowledge and Understanding) to Teaching Strategies and Assessment Methods:			
Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies
a1	Understand principles and techniques of radiographic film interpretation.	Lectures covering principles of radiographic interpretation.	Written exams, quizzes.
a2	Recognize radiographic signs and patterns of normal and abnormal anatomy.	Detailed review of radiographic images and common pathologies.	Case-based assessments.
(B) Alignment of Course Intended Learning Outcomes (Intellectual Skills) to Teaching Strategies and Assessment Methods:			
Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies
b1	Analyze radiographic images to identify potential abnormalities and pathologies.	Interactive discussions analyzing sample radiographs.	Written exams, image-based questions.
b2	Correlate radiographic findings with clinical scenarios for diagnostic conclusions.	Case studies correlating radiographs with clinical data.	Problem-solving tasks, case studies.
(C) Alignment of Course Intended Learning Outcomes (Professional and Practical Skills) to Teaching Strategies and Assessment Methods:			
Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies
c1			
c2			
(D) Alignment of Course Intended Learning Outcomes (Transferable Skills) to Teaching Strategies and Assessment Methods:			
Course Intended Learning Outcomes		Teaching Strategies	Assessment Strategies

d1	Communicate radiographic findings effectively in written formats.	Group assignments focusing on reporting findings.	Written assignments.
d2	Apply critical thinking to interpret complex radiographic cases.	Critical analysis of complex radiographic cases.	Written case analysis, group discussions.

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	Introduction to Radiographic Interpretation	- Basics of radiographic imaging. - Principles of film analysis. - Image quality factors. - Common artifacts.	1	2	a1, a2
2	Normal Radiographic Anatomy: Skeletal System	- Skull and facial bones. - Vertebral column. - Upper extremities. - Lower extremities.	1	2	a2
3	Radiographic Anatomy: Thoracic Cavity	- Bony thorax structures. - Lung fields and lobes. - Mediastinum anatomy. - Diaphragm and pleura.	1	2	a2, b1
4	Radiographic Anatomy: Abdominal Cavity	- Abdominal organs and their boundaries. - Vascular structures. - Gastrointestinal tract. - Retroperitoneal space.	1	2	a2
5	Pediatric Radiography: Special Considerations	- Differences in pediatric anatomy. - Common pediatric conditions. - Growth and development markers. - Pediatric radiography techniques.	1	2	a2, b1
6	Common Pathologies in Musculoskeletal Imaging	- Fractures and dislocations. - Degenerative diseases.	1	2	a2, b2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
		- Bone infections. - Tumors and lesions.			
7	Mid-term Exam	– All Previous topics	1	2	a1, a2, b1, b2, c1, c2
8	Pathologies in Thoracic Imaging	– - Pulmonary infections (e.g., pneumonia, TB). - Chronic lung diseases. - Pleural abnormalities. - Cardiomegaly and related conditions.	1	2	a2, b1
9	Gastrointestinal Pathologies in Radiography	– - Bowel obstructions and perforations. - Abdominal masses. - Hepatobiliary system conditions. - Pancreatic disorders.	1	2	a2, b2
10	Neurological Imaging: Head and Spine	– - Skull fractures and trauma. - Intracranial hemorrhage. - Spinal cord injuries. - Degenerative spine conditions.	1	2	a2, b1
11	Oncology in Radiographic Interpretation	– - Imaging of benign tumors. - Detection of malignant lesions. - Staging of cancers. - Metastasis identification.	1	2	a2, b2
12	Radiographic Signs of Infections	– - Osteomyelitis and bone infections. - Septic arthritis. - Soft tissue infections. - Systemic inflammatory conditions.	1	2	a2, b1
13	Trauma Radiography	– - Common imaging techniques for trauma. - Assessment of multiple injuries. - Imaging priorities in emergencies. - Radiographic patterns of trauma.	1	2	b1, c2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
14	Advanced Radiographic Techniques	- Contrast studies. - Digital imaging advancements. - Integration of CT and MRI. - Radiation safety considerations.	1	2	b2, d2
15	Case Studies in Radiographic Interpretation	- Integration of theoretical knowledge. - Complex case analysis. - Diagnostic formulation. - Reporting findings.	1	2	b1, d2
16	Final Exam	- All topics	1	2	a1, a2, b1, b2, c1, c2
Number of Weeks /and Units Per Semester			16	32	

B. Practical Aspect (Lab/Clinical) (if any):

No.	Tasks/ Experiments	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	None			
2				
3				
Number of Weeks /and Units Per Semester				

C. Tutorial Aspect (if any):

No.	Tutorial	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	None			
2				
3				

No.	Tutorial	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
Number of Weeks /and Units Per Semester				

VII. Teaching Strategies:
- Lectures - Case Discussions - Group Work - Independent Study

VII. Assessment Methods:
- Written Exams - Case-Based Assignments - Quizzes

VII. Assignments:				
No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1				
2				
Total			10	

VIII. Schedule of Assessment Tasks for Students During the Semester:					
No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Quiz 1: Basics of Radiographic Film Interpretation	Week 4	5	5%	a1, a2
2	Midterm Written Exam	Week 7	10	10%	a2, b1

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
3	Quiz 2: Pathological Findings in Radiography	Week 10	5	5%	a2, b2
4	Assignment: Radiographic Case Analysis	Week 12	10	10%	b1, d1
5	Final Written Exam	Week 14	70	70%	a2, b2, d2
Total			100	100 %	

IX. Learning Resources:

1- Required Textbook(s) (maximum two):

- 1- ASNT, 2020, Radiographic Interpretation – Revised Edition, ASNT.
- 2- Fred A. Mettler Jr. MD MPH, 2018, Essentials of Radiology: Common Indications and Interpretation, 4th Edition, Elsevier

2- Essential References:

- 1- Stuart C. White, Michael J. Pharoah, 2014, Oral Radiology: Principles and Interpretation, Elsevier Health Sciences

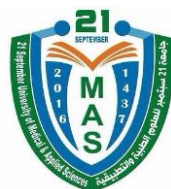
3- Electronic Materials and Web Sites etc.:

Electronic Materials and Websites

- www.radiologyinfo.org
- - www.radiologyinfo.org

X. Course Policies: (Based on the Uniform Students' By law (2007))

1	Class Attendance: Class Attendance is mandatory. A student is considered absent and shall be banned from taking the final exam if his/her absence exceeds 25% of total classes.
2	Tardiness: A student will be considered late if he/she is not in class after 10 minutes of the start time of class.
4	Assignments & Projects: Assignments and projects must be submitted on time. Students who delay their assignments or projects shall lose the mark allocated for the same.
5	Cheating: Cheating is an act of fraud that results in the cancelation of the student's exam or assignment. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.



6	Forgery and Impersonation: Forgery/Impersonation is an act of fraud that results in the cancelation of the student's exam, assignment or project. If it takes place in a final exam, the penalties stipulated for in the Uniform Students' Bylaw (2007) shall apply.
7	Other policies: The University official regulations in force will be strictly observed and students shall comply with all rules and regulations of the examination set by the Department, Faculty and University Administration.
3	Exam Attendance/Punctuality: No student shall be allowed to the exam hall after 30 minutes of the start time, and shall not leave the hall before half of the exam time has passed.

Faculty of Applied Medical Science

Department of **Medical Radiology and Imaging Technology**

Program of Radiologic Technology and Medical Imaging

Course Plan (Syllabus) of Radiographic Film Interpretation Course Code.

I. Information about Faculty Member Responsible for the Course:							
Name of Faculty Member:		Office Hours					
Location & Telephone No.:	-----						
E-mail:	--@--.--	SAT	SUN	MON	TUE	WED	THU

2024/2025

I. General Information:

12.	Course Title:	Radiographic Film Interpretation			
13.	Course Code:				
14.	Credit Hours:	Credit Hours	Theory Contact Hours		Practical Contact Hours
			Lecture	Tutorial/Seminar	Lab Clinical
		2	2	--	--
15.	Level/ Semester at which this Course is offered:	4 th Level / 2 nd Semester			
16.	Pre –Requisite (if any):	Radiographic technique I&II, Radiologic Equipment 1&2			
17.	Co –Requisite (if any):	None			
18.	Program (s) in which the Course is Offered:	Bachelor of Radiologic Technology and Medical Imaging			
19.	Language of Teaching the Course:	English			
20.	Location of Teaching the Course:	Faculty of Applied Medical Science			
21.	Prepared by:				
22.	Date and Number of Approval by Council:				

II. Course Description:

This course focuses on developing students' theoretical knowledge in interpreting radiographic films to assess anatomical structures and recognize pathological conditions. Emphasis is placed on understanding radiographic signs, image quality, and diagnostic patterns related to common clinical conditions. The course aims to equip students with the skills necessary to analyze radiographs critically, correlate findings with clinical contexts, and enhance their understanding of radiographic anatomy and pathology.

III. Course Intended Learning Outcomes (CILOs) :

Upon successful completion of the course, students will be able to:

A. Knowledge and Understanding:

- | | |
|----|---|
| a1 | Understand principles and techniques of radiographic film interpretation. |
| a2 | Recognize radiographic signs and patterns of normal and abnormal anatomy. |

B. Intellectual Skills:

- | | |
|----|---|
| b1 | Analyze radiographic images to identify potential abnormalities and pathologies. |
| b2 | Correlate radiographic findings with clinical scenarios for diagnostic conclusions. |

C. Professional and Practical skills:

- | | |
|----|--|
| c1 | |
| c2 | |

D. Transferable Skills:

- | | |
|----|---|
| d1 | Communicate radiographic findings effectively in written formats. |
| d2 | Apply critical thinking to interpret complex radiographic cases. |

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction to Radiographic Interpretation	- Basics of radiographic imaging. - Principles of film analysis. - Image quality factors. - Common artifacts.	1	2
2	Normal Radiographic Anatomy: Skeletal System	- Skull and facial bones. - Vertebral column.	1	2

Prepared by:

Reviewed by:
Dr. -----

Head of the Department:
Dr. Awadh Al-Kubati

Quality Unit:
Dr. Mohammed
Al-shamahi

Dean:
Dr. Abdulsalam
Dalaq

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
		- Upper extremities. - Lower extremities.		
3	Radiographic Anatomy: Thoracic Cavity	- Bony thorax structures. - Lung fields and lobes. - Mediastinum anatomy. - Diaphragm and pleura.	1	2
4	Radiographic Anatomy: Abdominal Cavity	- Abdominal organs and their boundaries. - Vascular structures. - Gastrointestinal tract. - Retroperitoneal space.	1	2
5	Pediatric Radiography: Special Considerations	- Differences in pediatric anatomy. - Common pediatric conditions. - Growth and development markers. - Pediatric radiography techniques.	1	2
6	Common Pathologies in Musculoskeletal Imaging	- Fractures and dislocations. - Degenerative diseases. - Bone infections. - Tumors and lesions.	1	2
7	Mid-term Exam	- All Previous topics	1	2
8	Pathologies in Thoracic Imaging	- Pulmonary infections (e.g., pneumonia, TB). - Chronic lung diseases. - Pleural abnormalities. - Cardiomegaly and related conditions.	1	2
9	Gastrointestinal Pathologies in Radiography	- Bowel obstructions and perforations. - Abdominal masses. - Hepatobiliary system conditions. - Pancreatic disorders.	1	2
10	Neurological Imaging: Head and Spine	- Skull fractures and trauma. - Intracranial hemorrhage. - Spinal cord injuries. - Degenerative spine conditions.	1	2
11	Oncology in Radiographic Interpretation	- Imaging of benign tumors. - Detection of malignant lesions. - Staging of cancers. - Metastasis identification.	1	2

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
12	Radiographic Signs of Infections	- Osteomyelitis and bone infections. - Septic arthritis. - Soft tissue infections. - Systemic inflammatory conditions.	1	2
13	Trauma Radiography	- Common imaging techniques for trauma. - Assessment of multiple injuries. - Imaging priorities in emergencies. - Radiographic patterns of trauma.	1	2
14	Advanced Radiographic Techniques	- Contrast studies. - Digital imaging advancements. - Integration of CT and MRI. - Radiation safety considerations.	1	2
15	Case Studies in Radiographic Interpretation	- Integration of theoretical knowledge. - Complex case analysis. - Diagnostic formulation. - Reporting findings.	1	2
16	Final Exam	- All topics	1	2
Number of Weeks /and Units Per Semester			16	32

B. Practical Aspect (Lab/Clinical) (if any):

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
1			
2			
3			
Number of Weeks /and Units Per Semester		11	22

C. Tutorial Aspect (if any):

No.	Tutorial	Number of Weeks	Contact Hours
1	None		
2			
3			
Number of Weeks /and Units Per Semester			

VII. Teaching Strategies:
- Lectures - Case Discussions - Group Work - Independent Study

VII. Assessment Methods:
- Written Exams - Case-Based Assignments - Quizzes

VII. Assignments:			
No.	Assignments	Week Due	Mark
1			
2			
Total			10

VIII. Schedule of Assessment Tasks for Students During the Semester:				
No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
1	Quiz 1: Basics of Radiographic Film Interpretation	Week 4	5	5%

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
2	Midterm Written Exam	Week 7	10	10%
3	Quiz 2: Pathological Findings in Radiography	Week 10	5	5%
4	Assignment: Radiographic Case Analysis	Week 12	10	10%
5	Final Written Exam	Week 14	70	70%
Total			100	100 %

IX. Learning Resources:

1- Required Textbook(s) (maximum two):

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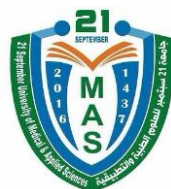
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