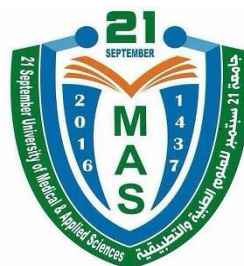


Republic of Yemen
Ministry of Education & Higher Research
Council of Academic Accreditation & Quality Assurance of
Higher Education (CAQA)



**21 september 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 Technique 1

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 Technique 1				
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:	2 nd Level / 1 st Semester				
5.	Pre –Requisite (if any):					
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 covers fundamental principles and techniques of radiographic imaging. It emphasizes positioning, image acquisition, and quality assurance. Students will learn to produce high-quality diagnostic images while minimizing radiation exposure to patients and staff.

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 the basic principles of radiographic techniques and image acquisition.	P	A1	Demonstrate an understanding of fundamental knowledge of Biomedical sciences (Biology, Biophysics, Anatomy, Physiology, Sectional anatomy, and medical imaging technique).
a2	Identify the anatomical landmarks for accurate positioning.	P	A2	Explanation of the principles and procedures of medical imaging acquisitions, medical imaging techniques, and Radiological Technology Sciences as well as patient positioning in computed radiography and MRI techniques.
B. Intellectual Skills:				
b1	Analyze the factors affecting image quality.	P	B3	Analyze and evaluate evidence-based information needed in medical imaging practice.
b2	Evaluate different radiographic techniques for various anatomical regions.	P	B2	Devising solutions for positioning and instructing people throughout a procedure, as well as using the radiation safety protocols.
C. Professional and Practical skills:				
c1	Demonstrate accurate patient positioning for common radiographic procedures.	P	C2	Apply technical skills in using medical imaging devices, tools, and materials in radiological technology practice.
c2	Operate radiographic equipment safely and effectively.	P	C4	Utilize appropriate manual and automated techniques in radiological imaging investigations.
D. Transferable Skills:				

d1	Communicate effectively with patients and healthcare professionals.	M	D1	Communicate effectively with clinicians, patients, and support staff.
d2	Work collaboratively in a healthcare setting.	M	D4	Function effectively as an individual, as a member, or leader of a team engaged in appropriate activities to the radiologic technology disciplines to accomplish a common goal.
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 the basic principles of radiographic techniques and image acquisition.	Lectures, Reading assignments, Multimedia resources	Quizzes, Midterm Exam, Final Exam
a2	Identify the anatomical landmarks for accurate positioning.	Lectures, Group discussions, Practical demonstrations	Practical exams, Case studies, Assignments
(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 the factors affecting image quality.	Group discussions, Problem-solving sessions	Case studies, Assignments, Practical exams
b2	Evaluate different radiographic techniques for various anatomical regions.	Lectures, Practical sessions, Workshops	Quizzes, Practical exams, Projects
(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	Demonstrate accurate patient positioning for common radiographic procedures.	Practical demonstrations, Hands-on practice	Practical exams, Lab reports
c2	Operate radiographic equipment safely and effectively.	Practical sessions, Simulations	Practical exams, Lab assessments
(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 effectively with patients and healthcare professionals.	Role-playing, Group discussions, Interpersonal training	Presentations, Peer assessments
d2	Work collaboratively in a healthcare setting.	Group projects, Team-based learning	Group projects, Peer evaluations

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 Techniques	– Principles of Radiography	1	2	a1, b1
2	Radiographic Equipment	– Components and Functions	1	2	a1, c2
3	Patient Positioning Basics	– Terminology and Concepts	1	2	a2, c1
4	Chest Radiography	– Positioning Techniques, Common Projections	1	2	a2, c1
5	Abdomen Radiography	– Positioning Techniques, Common Projections	1	2	a2, c1

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
6	Extremities Radiography	– Upper and Lower Limb Techniques	1	2	a2, b2, c1
7	Spine Radiography	– Cervical, Thoracic, Lumbar Techniques	1	2	a2, b2, c1
8	Mid-Term Exam	– In all previous Topics	1	2	a1, a2, b1, b2, c1
9	Skull and Facial Bones Radiography	– Positioning and Projections	1	2	a2, b2, c1
10	Pediatric Radiography	– Special Considerations, Techniques	1	2	a2, c1
11	Geriatric Radiography	– Special Considerations, Techniques	1	2	a2, c1
12	Digital Radiography	– Principles, Advantages, and Disadvantages	1	2	a1, b1, c2
13	Image Quality Factors	– Density, Contrast, Detail, Distortion	1	2	a1, b1
14	Radiation Protection Principles	– Safety Measures, ALARA Principle	1	2	a1, c2
15	Quality Assurance and Quality Control	– Procedures, Standards	1	2	b1, c2
16	Final Theoretical Exam	– All theoretical 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	Chest Radiography Practice: Positioning and Image Acquisition	1	2	c1, c2, d1

No.	Tasks/ Experiments	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
2	Abdomen Radiography Practice: Positioning and Image Acquisition	1	2	c1, c2, d1
3	Upper Extremity Radiography Practice: Positioning and Image Acquisition	1	2	c1, c2, d1
4	Lower Extremity Radiography Practice: Positioning and Image Acquisition	1	2	c1, c2, d1
5	Spine Radiography Practice: Positioning and Image Acquisition	1	2	c1, c2, d1
6	Skull Radiography Practice: Positioning and Image Acquisition	1	2	c1, c2, d1
7	Pediatric Radiography Practice: Special Techniques and Safety	1	2	c1, c2, d1
8	Geriatric Radiography Practice: Special Techniques and Safety	1	2	c1, c2, d1
9	Digital Radiography Experiment: Image Quality Assessment	1	2	b1, c2
10	Quality Assurance Test: Equipment and Image Quality Checks	1	2	b1, c2
15	Final Practical Exam	1	2	
Number of Weeks /and Units Per Semester		14	28	

C. Tutorial Aspect (if any):

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

Prepared by:

Reviewed by:
Dr. -----

Head of the Department:
Dr. Awadh Al-Kubati

Quality Unit:
Dr. Mohammed
Al-shamahi

Dean:
Dr. Abdulsalam
Dalaq

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

VII. Teaching Strategies:

- Lectures,
- Practical Sessions
- Group Discussions,
- Case Studies
- Simulations

VII. Assessment Methods:

- Written Exams,
- Quizzes,
- Practical Exams
- Midterm Exams,
- Assignments
- Case Studies
- Presentations

VII. Assignments:

No.	Assignments	Week Due	Mark	Aligned CILOs (symbols)
1	Research on Digital Radiography Advances	Week 5	2	a1, b1
2	Case Study Analysis	Week 8	4	b2, c1, d1
3	Quality Assurance Project	Week 12	4	b1, c2
Total			10	

VIII. Schedule of Assessment Tasks for Students During the Semester:

Prepared by:

Reviewed by:
Dr. -----

Head of the Department:
Dr. Awadh Al-Kubati

Quality Unit:
Dr. Mohammed
Al-shamahi

Dean:
Dr. Abdulsalam
Dalaq

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	Practical Exam	15	30	30%	c1, c2
2	Midterm Exam	Week 8	10	10%	a1, a2, b1, b2
3	Assignments & Quizzes	Week 3	10	10%	a1, b1, b2, c1, c2, d1
4	Final Exam	Week 16	50	50%	a1, a2, b1, b2, c1, c2
Total			100	100 %	

IX. Learning Resources:

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

- 1- Terri L. Fauber, 2020, Radiographic Imaging and Exposure, 6th Edition, Elsevier Health Sciences
- 2- Jeannean Hall Rollins, Bruce W. Long, Tammy Curtis, 2020, Merrill's Atlas of Radiographic Positioning and Procedures, Elsevier.

2- Essential References:

- 1- Mary Alice Statkiewicz Sherer, Paula J. Visconti, E. Russell Ritenour, Kelli Welch Haynes, 2017, Radiation Protection in Medical Radiography, Elsevier Health Sciences.
- 2- Richard Carlton, Arlene Adler, Vesna Balac, 2019, Principles of Radiographic Imaging: An Art and A Science, 6th Edition, Cengage Learning.

3- Electronic Materials and Web Sites etc.:

Electronic Materials and Websites

- Radiopaedia (www.radiopaedia.org)
- American Society of Radiologic Technologists (www.asrt.org)
- RadiologyInfo (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:

Prepared by:

Reviewed by:

Dr. -----

Head of the Department:

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Quality Unit:

Dr. Mohammed
Al-shamahi

Dean:

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Dalaq

	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 Technique 1 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 Technique 1				
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:	2 nd Level / 1 st Semester				
16.	Pre –Requisite (if any):					
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 covers fundamental principles and techniques of radiographic imaging. It emphasizes positioning, image acquisition, and quality assurance. Students will learn to produce high-quality diagnostic images while minimizing radiation exposure to patients and staff.

III. Course Intended Learning Outcomes (CILOs) :

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

A. Knowledge and Understanding:

a1 Understand the basic principles of radiographic techniques and image acquisition.

A2 Identify the anatomical landmarks for accurate positioning.

B. Intellectual Skills:

b1 Analyze the factors affecting image quality.

B2 Evaluate different radiographic techniques for various anatomical regions.

C. Professional and Practical skills:

c1 Demonstrate accurate patient positioning for common radiographic procedures.

C2 Operate radiographic equipment safely and effectively.

D. Transferable Skills:

d1 Communicate effectively with patients and healthcare professionals.

D2 Work collaboratively in a healthcare setting.

IV. Course Contents:

A. Theoretical Aspect:

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
1	Introduction to Radiographic Techniques	– Principles of Radiography	1	2
2	Radiographic Equipment	– Components and Functions	1	2
3	Patient Positioning Basics	– Terminology and Concepts	1	2
4	Chest Radiography	– Positioning Techniques, Common Projections	1	2
5	Abdomen Radiography	– Positioning Techniques, Common Projections	1	2
6	Extremities Radiography	– Upper and Lower Limb Techniques	1	2

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Quality Unit:

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Al-shamahi

Dean:

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Dalaq

No.	Units/Topics List	Sub Topics List	Number of Weeks	Contact Hours
7	Spine Radiography	– Cervical, Thoracic, Lumbar Techniques	1	2
8	Mid-Term Exam	– In all previous Topics	1	2
9	Skull and Facial Bones Radiography	– Positioning and Projections	1	2
10	Pediatric Radiography	– Special Considerations, Techniques	1	2
11	Geriatric Radiography	– Special Considerations, Techniques	1	2
12	Digital Radiography	– Principles, Advantages, and Disadvantages	1	2
13	Image Quality Factors	– Density, Contrast, Detail, Distortion	1	2
14	Radiation Protection Principles	– Safety Measures, ALARA Principle	1	2
15	Quality Assurance and Quality Control	– Procedures, Standards	1	2
16	Final Theoretical Exam	– All theoretical 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	Chest Radiography Practice: Positioning and Image Acquisition	1	2
2	Abdomen Radiography Practice: Positioning and Image Acquisition	1	2
3	Upper Extremity Radiography Practice: Positioning and Image Acquisition	1	2
4	Lower Extremity Radiography Practice: Positioning and Image Acquisition	1	2
5	Spine Radiography Practice: Positioning and Image Acquisition	1	2

No.	Tasks/ Experiments	Number of Weeks	Contact Hours
6	Skull Radiography Practice: Positioning and Image Acquisition	1	2
7	Pediatric Radiography Practice: Special Techniques and Safety	1	2
8	Geriatric Radiography Practice: Special Techniques and Safety	1	2
9	Digital Radiography Experiment: Image Quality Assessment	1	2
10	Quality Assurance Test: Equipment and Image Quality Checks	1	2
15	Final Practical Exam	1	2
Number of Weeks /and Units Per Semester		14	28

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,
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- Simulations

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- Midterm Exams,

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- Assignments
- Case Studies
- Presentations

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No.	Assignments	Week Due	Mark
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2	Case Study Analysis	Week 8	4
3	Quality Assurance Project	Week 12	4
Total			10

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No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment
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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.