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

Clinical Practice III

Course Code. (____)

2024

Prepared by:	Reviewed by:	Head of the Department:	Quality Unit:	Dean:
	Dr. -----	Dr. Awadh Al-Kubati	Dr. Mohammed Al-shamahi	Dr. Abdulsalam Dalaq

I. General Information:

1.	**Course Title:**	Clinical Practice III				
2.	**Course Code:**					
3.	**Credit Hours:**	**Credit Hours**	**Theory Contact Hours**		**Practical Contact Hours**	
			Lecture	**Tutorial/ Seminar**	**Lab**	**Clinical**
		4	--	--	--	12
4.	**Level/ Semester at which this Course is offered:**	3rd Level / 2nd Semester				
5.	**Pre –Requisite (if any):**	Clinical Practice I, II				
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:

Clinical Practice III is an advanced clinical training course designed for students to refine their technical skills in diagnostic imaging and radiologic technologies. This course expands on previous clinical experiences by introducing students to more complex procedures and settings. Students will be required to operate advanced imaging systems with increasing independence, including fluoroscopy, CT, MRI, and interventional radiology techniques. They will also engage in specialized patient care, such as in intensive care units (ICUs) and emergency departments, under the supervision of experienced technologists and radiologists. The course aims to prepare students for the transition into professional practice by enhancing their decision-making skills, technical proficiency, and communication with patients and healthcare teams.

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	Demonstrate an understanding of advanced imaging procedures in various clinical settings.	**M**	**A2**	Explanation of the principles and procedures of medical imaging acquisitions, medical imaging techniques, and Radiological Technology Sciences, including advanced imaging modalities.
a2	Integrate knowledge of radiologic safety and infection control in a variety of clinical scenarios.	**M**	**A3**	Exhibit professional characteristics required by the radiologic technology profession, including safety and infection control practices.
	B. Intellectual Skills:			
b1	Analyze complex clinical situations and adapt radiologic techniques accordingly.	**P**	**B1**	Assess the radiation exposure times and intensity of exposure to guarantee imaging technique accuracy while adapting to patient needs and clinical complexities.
b2	Critically evaluate and adjust imaging protocols based on patient condition.	**P**	**B3**	Analyze and evaluate evidence-based information needed in medical imaging practice.
	C. Professional and Practical kills:			
c1	Perform diagnostic imaging procedures with minimal supervision in specialized settings.	**P**	**C2**	Apply technical skills in using medical imaging devices, tools, and materials in radiological technology practice.
c2	Manage patient care in various clinical environments, including emergency and intensive care units (ICUs).	**P**	**C4**	Utilize appropriate manual and automated techniques in radiological imaging investigations.
	D. Transferable Skills:			
d1	Communicate effectively with patients, healthcare teams, and supervisors.	**M**	**D1**	Communicate effectively with clinicians, patients, and support staff.
D2	Demonstrate leadership and professionalism in clinical practice.	**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	Demonstrate an understanding of advanced imaging procedures in various clinical settings.	▪ Advanced clinical exposure to specialized imaging modalities (interventional radiology, advanced CT/MRI).	▪ Observation during clinical rotations, practical exams.
A2	Integrate knowledge of radiologic safety and infection control in a variety of clinical scenarios.	▪ Lectures and seminars on infection control and radiologic safety protocols in various settings.	▪ Written exams, clinical practice evaluations.

(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 complex clinical situations and adapt radiologic techniques accordingly.	▪ Case-based learning, clinical practice in emergency and ICU settings.	▪ Practical exams, direct observation of clinical practice.
B2	Critically evaluate and adjust imaging protocols based on patient condition.	▪ Image evaluation and decision-making in complex clinical situations.	▪ Written reports, supervisor feedback.

© 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	Perform diagnostic imaging procedures with minimal supervision in specialized settings.	▪ Supervised practice in advanced diagnostic imaging procedures, minimal supervision.	▪ Performance assessments, clinical evaluations.
C2	Manage patient care in various clinical environments, including emergency and intensive care units (ICUs).	▪ Real-time patient management, exposure to diverse clinical environments (ER, ICU).	▪ Supervisor feedback, practical 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, healthcare teams, and supervisors.	▪ Team-based patient care tasks, communication exercises.	▪ supervisor evaluations.
D2	Demonstrate leadership and professionalism in clinical practice.	▪ Leadership roles in clinical settings, handling emergency cases.	▪ Self-assessment, clinical performance evaluations.

IV. Course Contents:

A. Theoretical Aspect:

No.	Title	Sup-title	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	None	–			

No.	Title	Sup-title	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
2		–			
Number of Weeks /and Units Per Semester			16	32	

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

No.	Title	Sup-title	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
1	**Advanced Imaging in Interventional Radiology**	– Angiography, biopsy procedures, fluoroscopy in interventions	1	12	a1, b2
2	**Imaging in Emergency and Trauma Care**	– Trauma protocols, rapid imaging techniques, patient stabilization	1	12	c2, b1
3	**MRI and CT in Critical Care**	– Imaging for ICU patients, monitoring critical conditions	1	12	a1, c2
4	**Radiation Protection and Infection Control in Complex Settings**	– Safety protocols, handling infectious patients in imaging rooms	1	12	a2, d1
5	**Specialized Imaging for Pediatric and Geriatric Patients**	– Pediatric positioning, geriatric patient care in imaging	1	12	b1, c1
6	**Image Quality and Troubleshooting**	– Advanced techniques in image quality control, problem-solving	2	12	b1, c2
7	**Patient Communication and Care in Advanced Imaging**	– Managing patient anxiety, ethical considerations, patient rights	2	12	d1, c2
8	**Advanced Patient Preparation for Imaging Procedures**	– Special preparation for invasive procedures, sedated patients	2	12	c1, a2
9	**Legal and Ethical Issues in Radiologic Practice**	– Confidentiality, patient rights, informed consent	2	12	d2, b2

No.	Title	Sup-title	Number of Weeks	Contact Hours	Learning Outcomes (CILOs)
10	Technological Advances in Radiologic Imaging	– New technologies in CT, MRI, and interventional radiology	2	12	a1, d2
16	Final Practical Exam	– All topics	1	12	a1, a2, b1, b2, c1, c2, d1, d2
Number of Weeks /and Units Per Semester			16		

C. Tutorial Aspect (if any):

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

VII. Teaching Strategies:

- Clinical Placement,
- Case Study Discussions
- Supervised Clinical Practice
- Workshops and Lectures
- Reflective Practice

VII. Assessment Methods:

- Clinical Evaluations
- Practical Exams
- Loog book
- Instructor Feedback
- Case Study Reports

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	**Clinical Evaluation**	Ongoing	20	20%	c1, a1, b2
2	**Reflection Journal**	7	20	20%	d2, d1
3	**Final Practical Exam**	16	50	50%	b1, c2
4	**Case Study Report**	10	10	10%	b2, c1
Total			**100**	**100 %**	

IX. Learning Resources:

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

1- Stewart C. Bushong, 2020, Radiologic Science for Technologists Physics, Biology, and Protection, 12th Edition, Elsevier
2- James Johnston, 2024, Essentials of Radiographic Physics and Imaging, Elsevier.

2- Essential References:

1- Arlene M. Adler, Richard R. Carlton, Kori L. Stewart, 2022, Introduction to Radiologic & Imaging Sciences & Patient Care, 8th Edition, Elsevier.
2- Catherine Westbrook, John Talbot John Wiley & Sons, Oct 22, 2018, MRI in Practice, 5th Edition, Wiley-Blackwell..

3- Electronic Materials and Web Sites etc.:

Electronic Materials and Websites

- Radiology Society of North America (RSNA) Resources
- American College of Radiology (ACR) guidelines
- www.rsna.org

- www.asrt.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

Clinical Practice III

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

Prepared by:	Reviewed by:	Head of the Department:	Quality Unit:	Dean:
	Dr. -----	Dr. Awadh Al-Kubati	Dr. Mohammed Al-shamahi	Dr. Abdulsalam Dalaq

I. General Information:

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			Lecture	**Tutorial/ Seminar**	**Lab**	**Clinical**
		4	--	--	--	12
15.	**Level/ Semester at which this Course is offered:**	3rd Level / 2nd Semester				
16.	**Pre –Requisite (if any):**	Clinical Practice I, II				
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				
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III. Course Intended Learning Outcomes (CILOs) :
Upon successful completion of the course, students will be able to:

	A. Knowledge and Understanding:
a1	Demonstrate an understanding of advanced imaging procedures in various clinical settings.
A2	Integrate knowledge of radiologic safety and infection control in a variety of clinical scenarios.
	B. Intellectual Skills:
b1	Analyze complex clinical situations and adapt radiologic techniques accordingly.
B2	Critically evaluate and adjust imaging protocols based on patient condition.
	C. Professional and Practical kills:
c1	Perform diagnostic imaging procedures with minimal supervision in specialized settings.
C2	Manage patient care in various clinical environments, including emergency and intensive care units (ICUs).
	D. Transferable Skills:
d1	Communicate effectively with patients, healthcare teams, and supervisors.
D2	Demonstrate leadership and professionalism in clinical practice.

IV. Course Contents:

A. Theoretical Aspect:

No.	Title	Sup-title	Number of Weeks	Contact Hours
1	**None**	–		

No.	Title	Sup-title	Number of Weeks	Contact Hours
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Number of Weeks /and Units Per Semester				

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

No.	Title	Sup-title	Number of Weeks	Contact Hours
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9	**Legal and Ethical Issues in Radiologic Practice**	– Confidentiality, patient rights, informed consent	2	12
10	**Technological Advances in Radiologic Imaging**	– New technologies in CT, MRI, and interventional radiology	2	12
16	**Final Practical Exam**	– All topics	1	12
Number of Weeks /and Units Per Semester			**16**	**32**

C. Tutorial Aspect (if any):

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

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Total			10	

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