

Course Specification

(2025)

1. Basic Information

Course Title (according to the bylaw)	Plain radiographic techniques I			
Course Code (according to the bylaw)	TRMI 202			
Department/s participating in delivery of the course	Technology of Radiology and Medical Imaging			
Number of credit hours(according to the bylaw)	Theoretical	Practical	Other (specify)	Total
	2	2	-	3
Course Type	compulsory			
Academic level at which the course is taught	Level:2			
Academic Program	Technology of Radiology and Medical Imaging			
Institute	High Technology Institute Of Applied Health Science			
Academy	Nile Delta for Science			
Name of Course Coordinator	Dr Mohamed Auf, Lecturer of Biology Radiation Science , High Technology Institute of Applied Health Science			
Course Specification Approval Date	Department Council No. 2, date: (21 – 09 – 2024)			
Course Specification Approval (Attach the decision/minutes of the department /committee/council)				

2. Course Overview (Brief summary of scientific content)

1. Perform intermediate and advanced plain radiographic procedures with appropriate positioning and technique.
2. Apply radiation protection measures for patients, personnel, and self.
3. Identify anatomical structures and pathologies in the radiographic images.
4. Critically evaluate image quality and suggest improvements.
5. Demonstrate patient care, communication, and professional ethics during radiographic procedures.
6. Operate plain radiographic equipment in the different settings.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

Program Outcomes (ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
POs 1.1.2	Describe the normal structure of the body and its major organ systems and	CLOs 1	Describe the anatomical landmarks and radiographic anatomy of the skull, facial bones, Para nasal sinuses, cervical spine, dorsal spine, lumbosacral spine, and chest.
POs 1.1.4	Interpret anatomical structure, pathological findings and imaging data utilizing radiological information systems. Understand the comprehensive		Identify common clinical indications and pathologies that require imaging of the skull, spine, and chest.
	knowledge of nuclear physics, plain X-ray, ultrasound, CT, MRI,	CLOs 3	Explain the standard radiographic projections,
POs 1.1.3	contrast media, bone densitometry, interventional and cardiovascular techniques.		Positioning techniques, and beam alignment for each anatomical region covered.
	Use health informatics to improve the quality of patient care &	CLOs 4	Learn the protocols for quality control and management in

POs 1.2.3	operate radiological information		radiologic technology.
POs 1.2.2	Apply statistical skills and evidence based practice in imaging data manipulation and analysis.	CLOs 5	Select the appropriate projections and exposure factors based on clinical indications and patient conditions.
POs 1.2.1	Use computers and software in medical imaging effectively	CLOs 6	Evaluate the diagnostic quality of radiographic images and analyze sources of errors or artifacts.
POs 1.2.1	Troubleshoot technical errors and interpret results effectively in medical radiology practice		Differentiate between normal and abnormal radiographic appearances of the covered anatomical regions.
POs 2.4.2		CLOs 7 CLOs 8	Apply critical thinking and problem-solving skills in trauma and difficult patient positioning scenarios.
POs 1.3.3	Participate in internal and external medical imaging audits and accreditation processes.	CLOs 9	Demonstrate correct patient positioning and technique for radiographic examinations of the: Skull, Facial bones and Para nasal sinuses, Cervical, dorsal, and lumbosacral spine, and Chest.
POs 3.1.1	Perform, maintain and evaluate routine and advanced diagnostic imaging procedures (x-ray, ultrasound and nuclear medicine)	CLOs 10	Operate radiographic equipment safely and effectively in performing relevant procedures.
POs 3.1.3	Apply radiation dose optimization and image quality control techniques	CLOs 11	Implement radiation protection principles to minimize exposure to patients, staff, and self.
	Ensure confidentiality, privacy of		

POs 2.1.2	patients' information, Comfort, preparation and ethical standards in all radiology procedures. Practice in an ethical and professional manner consistent with relevant legislation and	CLOs 12	Handle patients professionally with attention to comfort, communication, and ethical standards during radiographic procedures
POs 3.2.3	Educate patients on the purpose, process, potential risks, and expected outcomes of the imaging procedure, using language appropriate to the patient's level of understanding.	CLOs 13	Communicate effectively with peers, instructors, and patients during radiographic procedures and discussions.
POs 4.1.1	Participate in teamwork harmoniously and exhibit collaborate effectively with Colleagues and other health care professionals.	CLOs 14	Work collaboratively in lab groups and clinical simulations, demonstrating teamwork and responsibility.
POs 1.1.3	Understand the comprehensive knowledge of nuclear physics, plain X-ray, ultrasound, CT, MRI, contrast media, bone densitometry, interventional and cardiovascular techniques.	CLOs 15	Utilize digital imaging systems and basic informatics tools to acquire, assess, and archive radiographic images
POs 4.3.1	Revise a personal learning plan to enhance professional practice.	CLOs 16	Engage in self-reflection and continuous learning through image critique and feedback sessions.

4. Teaching and Learning Methods

1. Interactive Lectures
2. Discussion and brain storming
3. Asynchronous learning
4. Self-Directed Learning (SDL):
Research and presentation, Assignment, reports
5. Practical Learning
6. Asynchronous learning
7. Extra lectures
8. Guideline during office hours

Course Schedule

5. Methods of students' assessment

Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/)	Training (Practical/ Clinical/)	Self-learning (Tasks/ Assignments / Projects/ ...)	Other (to be determined)
1	Introduction to Plain radiographic techniques	3	2	---	1	—
2	Terms used in plain radiography	3	2	2	1	-
3	Upper Limb Radiography	3	2	2	1	-
4	Digital Imaging Equipment	3	2	2	1	-
5	Radiographic positioning terminology	3	2	2	1	-
6	Mid-Term Exam	-	-	-	1	-
7	The Radiographic Image	3	2	2	1	-
8	Lower Limb Radiography	3	2	2	1	-
9	POSITIONING OF SPINE & PELVIS	3	2	2	1	-
10	POSITIONING OF SPINE & PELVIS 2	3	2	2	1	-
11	Plain Film Radiography of the Abdomen	3	2	2	1	-
12	The Chest X-Ray	3	2	2	1	-
13	The Radiographic Image	3	2	2	1	-
14	Revision	3	2	2	1	-
15	Practical Exam	-	-	-	-	-
16	Final written exam	-	-	-	-	-
No .	Assessment Methods *		Assessment Timing (Week Number)	Marks/ Scores	Percentage of total course Marks	
1	Mid-Term Exam		6	20	20%	
2	Final Practical/Clinical/... Exam		15	30	30%	
3	Final Written Exam		16	100	50%	

*** The methods mentioned are examples, the organization may add and/or delete**

6. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	The main (essential) reference for the course (must be written in full according to the scientific documentation method)	Merrill's Atlas of Radiographic Positioning and Procedures, latest edition.
	Other References	Radiographic Imaging and Exposure by Terri L. Fauber.
	Electronic Sources (Links must be added)	Radiopaedia.org Knowledge bank: https://www.ekb.eg/ar
	Learning Platforms (Links must be added)	https://bislms.mans.edu.eg/
	Other (to be mentioned)	-
Supportive facilities & equipment for teaching and learning *		Projector
	Devices/Instruments	Whiteboard Markers
	Supplies	Models
	Electronic Programs	Practical Skills Labs
	Skill Labs/ Simulators	-----
	Virtual Labs	-----
	Other (to be mentioned)	-----

*** The list mentioned is an example, the institution may add and/or delete depending on the nature of the course**

Name and Signature

Course Coordinator

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Name and Signature

Program Coordinator

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High Technology Institute of
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