

Course Specification

(2025/2026)

1. Basic Information

Course Title (according to the bylaw)	Pediatric Imaging Techniques			
Course Code (according to the bylaw)	TRMI 404			
Department/s participating in delivery of the course	Technology of Radiology and Medical Imaging			
Number of credit hours/points of the course (according to the bylaw)	Theoretical	Practical	Other (specify)	Total
	2	0	-	2
Course Type	Compulsory			
Academic level at which the course is taught	Level 4 – 1 st Semester			
Academic Program	Technology of Radiology and Medical Imaging			
Institute	High Technology Institute of Applied Health Sciences			
Academy	Nile Delta for sciences			
Name of Course Coordinator	Dr. Amira Atef, Docotor of Biology Radiation Science Institute of High Technology Institute of Applied			

	Health Science
Course Specification Approval Date	21-9-2024
Course Specification Approval (Attach the decision/minutes of the department /committee/council)	/ 9/2024

2. Course Overview (Brief summary of scientific content)

This course covers the fundamentals of pediatric imaging. Students will be able to understand pediatric diseases through various imaging modalities in the context of significant developmental changes from infancy to adulthood. Furthermore, they provide imaging recommendations based on safe and up to date practices and technologies

3. Course Learning Outcomes CLOs

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

Program Outcomes(POs = sub-competences) (ARS) (according to the matrix in the program specs)		Course Learning Outcomes (CLOs) Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
POs	Describe the normal structure	CLOs 1	Describe pediatric anatomical

Program Outcomes(POs = sub-competences) (ARS) (according to the matrix in the program specs)		Course Learning Outcomes (CLOs) Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
1.1.2	of the body and its major organ systems and explain their functions		differences relevant to radiologic .imaging
		CLOs 2	Explain pediatric-specific radiologic protocols and positioning .techniques
POs 3.1.3	Apply radiation dose optimization and image quality control techniques	CLOs 3	Outline radiation safety principles .specific to pediatric patients
POs 2.3.1	Collect, analyze and interpret medical imaging data using scientific methods	CLOs 4	Analyze pediatric imaging findings and correlate with clinical .scenarios
POs 1.1.4	Interpret anatomical structure, pathological findings and imaging data utilizing radiological information systems	CLOs 5	Differentiate normal pediatric anatomy from pathological .conditions

Program Outcomes(POs = sub-competences) (ARS) (according to the matrix in the program specs)		Course Learning Outcomes (CLOs) Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
POs 3.1.1	Perform, maintain and evaluate routine and advanced diagnostic imaging procedures (x-ray, ultrasound and nuclear medicine)	CLOs 6	Evaluate the appropriateness of imaging modalities for pediatric cases
POs 4.1.2	Apply critical and reflective thinking to resolve questions.	CLOs 7	Solve case-based problems related to pediatric imaging protocols
POs 2.1.3	Practice in an ethical and professional manner consistent with relevant legislation and regulatory requirements in medical imaging	CLOs 8	Critically reflect on ethical concerns, especially in suspected abuse cases
POs 2.2.1	Adopt suitable measures for infection control in medical imaging environment	CLOs 9	Perform pediatric radiologic techniques with attention to safety and comfort
		CLOs 10	Implement radiation protection measures suitable for neonates and

Program Outcomes(POs = sub-competences) (ARS) (according to the matrix in the program specs)		Course Learning Outcomes (CLOs) Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
			.children
POs 2.2.3	Operate equipment safely and troubleshoot medical imaging devices	CLOs 11	Operate radiologic equipment using pediatric-specific parameters .and protocols
POs 4.2.3	Apply clear, respectful, and culturally sensitive communication techniques to ensure that patients, families, and community members understand the purpose, process, and implications of radiology and imaging procedures.	CLOs 12	Demonstrate communication skills suitable for working with pediatric .patients and caregivers
POs 3.1.1	Perform, maintain and evaluate routine and advanced diagnostic imaging procedures (x-ray, ultrasound and nuclear medicine)	CLOs 13	Apply sedation protocols and safety considerations during pediatric .MRI or ultrasound procedures
POs 3.2.5	Coordinate with multidisciplinary healthcare teams to confirm all preparatory requirements are	CLOs 14	Communicate effectively with multidisciplinary teams and .caregivers

Program Outcomes(POs = sub-competences) (ARS) (according to the matrix in the program specs)		Course Learning Outcomes (CLOs) Upon completion of the course, the student will be able to:	
Code	Text	Code	Text
	met, including equipment readiness, patient positioning, and adherence to infection control and radiation safety measures.		
POs 3.1.7	Manage workflow efficiency by coordinating patient scheduling, optimizing resource allocation, and minimizing delays while maintaining a high standard of patient care and staff productivity.	CLOs 15	Manage time efficiently in clinical .pediatric imaging scenarios
POs 4.2.1	Communicate effectively and develop collaborative relationships with all healthcare team.	CLOs 16	Work collaboratively in clinical teams or during case-based .discussions
POs 3.2.6	Implement appropriate physical and psychological preparation measures such as fasting instructions, contrast administration protocols, and anxiety reduction strategies in	CLOs 17	Exhibit empathy and professionalism when dealing with .pediatric patients

Program Outcomes(POs = sub-competences) (ARS) (according to the matrix in the program specs)		Course Learning Outcomes (CLOs) Upon completion of the course, the student will be able to:	
	accordance with established clinical guidelines		
POs 3.2.4	Train and monitor junior staff and students in medical imaging procedures	CLOs 18	Demonstrate commitment to continuous learning, particularly in the evolving field of pediatric .imaging

4. Teaching and Learning Methods

1. Interactive Lectures.
2. Discussion and brain storming.
3. Asynchronous learning.
4. Case study /problem solving.
5. Self-Directed Learning (SDL).
6. Research and presentations, Assignment and reports.
7. Practical Learning

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 pediatric radiology	2	2	0	-	-
2	Principles of Pediatric Imaging & Radiation Protection	2	2	0	-	-
3	Pediatric X-ray: Techniques and Considerations	2	2	0	-	-
4	Pediatric Abdominal Imaging	2	2	0	-	-
5	Pediatric Chest Imaging	2	2	0	-	-
6	Mid-Term Exam					
7	Pediatric Musculoskeletal Imaging	2	2	0	-	-
8	Imaging in Suspected Child Abuse	2	2	0	-	-
9	Pediatric Genitourinary Imaging in Neonates	2	2	0	-	-
8						

10	Pediatric Ultrasound and Nuclear Medicine: Basic Principles	2	2	0	-	-	
11	Pediatric MRI: Sedation, Protocols, and Cases	2	2	0	-	-	
12	Pediatric Neuroradiology (1)	2	2	0	-	-	
13	Pediatric Neuroradiology (2)		2	0			
14	Scanxiety: Managing Stress and Anxiety in Pediatric Imaging (1)	2	2	0	-	-	
15	Scanxiety: Managing Stress and Anxiety in Pediatric Imaging (2)	2	2	0			
16	Practical Exam						
17	Final exam						
15	Final Written Exam	-	-	-	-	-	

Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of total course Marks
1	Exam 1 written (Semester work)			
2	Exam 2 (midterm)	6	10	10%
3	Final Written Exam	17	70	70%

	Final Practical/Clinical/... Exam	16	20	20%
	Final Oral Exam			
	Assignments / Project /Portfolio/ Logbook	-	-	-
	Field training			
	Other (Mention)			

*** 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)	Pediatric Radiology: The Requisites – Thorne Griscom, Lane F. Donnelly
	Other References	Pediatric Imaging: The Fundamentals – Lane F. Donnelly
	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 *	Devices/Instruments	Computers, Boards and Projectors
	Supplies	
	Electronic Programs	Ibn Al-Haytham Program
	Skill Labs/ Simulators	
	Virtual Labs	
	Other (to be mentioned)	Computers, Boards and Projectors

*** 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

Dr. Amira Atef

Name and
Signature

Program Coordinator

Dr. Amira Atef