Ministry of Higher Education and Scientific Research
Scientific Supervision and Evaluation Authority
Quality Assurance and Academic Accreditation Department

Description of Academic Program

Madenat Alelem University

College of Science

Department of Medical Physics

كلية العلوم
جامعة مدينة العلم
M A U

2026

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Academic Program Description Form

University Name: **Madenat Alelem** University

College/Institute: College of Science

Scientific Department: Department of Medical Physics

Program Name: Bachelor of Science in Medical Physics

Degree Title: Bachelor of Science in Medical Physics

Academic System: Semester-based

Description Preparation Date: 26/2/2026

Date of File Completion: 27/2/2026

Signature:
Head of Department Name: Waleed N. Raja
Date: 26/2/2026

Signature:
Scientific Associate Name: **Ass. Proof. Dr Mahmood M. Abdul-Huss**
Date: 27/2/2026 2

The file is checked by:
Department of Quality Assurance and University Performance
Director of the Quality Assurance and University Performance Department:
Date: ٢٠٢٦/٢/٢٠
Signature:

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Ass. Prof. Dr. Waleed Nassar Raja

Approval of the Dean

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1. Vision

"The Department of Medical Physics aspires to be a leading academic center in education and scientific research, distinguished in preparing qualified professionals capable of applying the principles of physics to medical applications, thus contributing to the development of healthcare and community service according to international standards."

2. Program Mission

"The Medical Physics program aims to prepare graduates who are scientifically and practically qualified in the applications of physics in the medical field, through providing distinguished academic education, developing scientific research skills, and promoting professional values, keeping pace with modern developments and meeting the needs of the health sector and society."

3. Program Objectives

"To prepare qualified professionals in medical physics who possess the knowledge, applied skills, and research capabilities to work efficiently in the health sector and keep abreast of modern developments."

4. Program Accreditation

Ministry of Higher Education and Scientific Research / College Accreditation Councils

5. External Influences

Job Market - Field Visits to Government Departments - Application

6. Program Structure

Program Structure	Number of courses,	credit hours,	number of units,	, percentage,	notes*
Institutional Requirements					
College Requirements					
Department Requirements	8	36	30	120%	
Summer Internship	Classes Two and Three				
Other	Training in government hospitals and centers in Baghdad				

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1. Faculty

Faculty Members

Name of Faculty Member	Academic Rank	Specialization		Special Requirements /Skills (if any)		Faculty preparation	
		General	Specialized			staff	Lecturer
Waleed Nassar Raja	Assistant Professor	Physics	Nuclear Physics	Clinical Chemistry		*	
Mustafa Kamel Jassim	Assistant Professor	Physics	Physics	Clinical Chemistry		*	
Wissam Abdullah Latif	Lecturer	Physics	Materials Physics	Clinical Chemistry		*	
Ali Kadhim Sayed	Assistant Lecturer	Physics	Medical Physics	Clinical Chemistry		*	
Ola Janan Qasim	Assistant Lecturer	Atmospheric Science	Atmospheric Science	Clinical Chemistry		*	
Karrar Kadhim Karim	Assistant Lecturer	Atmospheric Science	Atmospheric Science	Clinical Chemistry		*	
Ghufran Walid Mohammed	Assistant Lecturer	Physics Education	Nuclear Physics	Clinical Chemistry		*	
Khamis Dhari Khamis	Teaching Assistant	Physics	Medical Physics	Clinical Chemistry		*	
Zahraa Hashim Abdul Amir	Teaching Assistant	Physics	Nuclear Physics	Clinical Chemistry		*	
Hassan Abdul Salman	Assistant Professor)	Mathematics	Applied Mathematics)			*	
Nada Mohammed Hassan	Assistant Lecturer	Physics	Materials Physics			*	

Rabah Salem Sharif	Assistant Professor	Agriculture	Bioprocess Engineering				*
Bilal Jasser Mohammed	Professor	Chemistry	Clinical Chemistry				*

Study plan for the Department of Applied Medical Physics

Year/Level	Course Code	Course Name	Credit Hours				units
			theoretical	Teaching method	practical	Teaching method	
Forth level First semester	MPH24101	Medical Physics II	2	Lectures	2	practical	3
	MPH24102	Medical Image Processing	2	Lectures	2	practical	3
	MPH24103	Radiation Protection	2	Lectures	0		2
	MPH24104	Medical Physics III	2	Lectures	2	practical	3
	MPH24105	Biomaterials	2	Lectures	0		2
	MPH24106	Graduation Project	2	Lectures	0		2
Forth level second semester	MPH24207	Image Analysis	2	Lectures	2	practical	3
	MPH24208	Professional Ethics	2	Lectures	0		2
	MPH24209	Nuclear Medicine	2	Lectures	0		2
	MPH24204	Medical Physics IV	2	Lectures	2	practical	2
	MPH24210	Neurophysics	2	Lectures	0		2
	MPH24211	Medical Accelerators	2	Lectures	0		2
	MPH24206	Graduation Project	2	Lectures	0	practical	2

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1. Expected Learning Outcomes of the Program	
Objectives (Knowledge):	
Learning Outcomes	Methods for Assessing Knowledge and Understanding
A1: To produce graduates qualified in medical physics, both theoretically and practically. A2: To develop skills in using modern medical technologies and equipment. A3: To enhance scientific research and analytical capabilities in the medical field. A4: To meet the needs of the healthcare sector with competent and professional personnel.	-To provide students with a scientific foundation in medical physics. Assessment methods: Written tests, conceptual questions, quizzes. -To develop an understanding of the applications of physics in diagnosis and treatment. Assessment methods: Reports, essay questions, class discussions. -To enhance the ability to interpret medical phenomena and data. Assessment methods: Case studies, analytical tests, homework assignments. -To foster an understanding of safety principles and procedures in medical settings. Assessment methods: Written tests, oral assessments, short presentations.
Skills	
Learning Outcomes:	Methods for assessing thinking skills:
B1: Proficiency in using medical devices and technologies. B2: Accurate analysis of medical data. B3: Application of physics principles in diagnosis and treatment. B4: Commitment to professional ethics and teamwork.	- Problem-solving through applied problems and case studies. - Analysis and study of real-world cases in medical physics. - Preparing scientific reports that include interpretation and analysis of results. - Classroom discussions and posing analytical questions. - Presentations that require critical thinking and deduction. - Short research projects.
Values	
Learning Outcomes:	A statement of learning results
C1: Professional Integrity C2: Responsibility and Teamwork C3: Quality C4: Community Service	-Commitment to professional ethics and integrity in work. -Taking responsibility and working effectively within a team. -Adherence to quality and safety standards in the medical environment. -Contributing to community service and promoting health awareness.
2. Teaching and Learning Strategies	
• Lecture • Dialogue and Discussion • Cooperative Learning (Group Classes)	

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• Brainstorming • Reciprocal Teaching • Posting lectures on the college or department website for all instructors and all course materials • Using projectors and audio equipment • Writing research papers and reports in English • Speaking English in class and during class participation • Conducting research and experiments to achieve the Sustainable Development Goals
3. Assessment Methods
• Direct question-and-answer sessions during lectures • Expected and surprise daily quizzes • Evaluation of research papers and assessment of their writing in terms of style, expression, and spelling • Questions to measure listening and attention in English • Student participation in evaluating peer performance • Practical assessment exams focusing on listening, speaking, and reading • Monthly and term exams • Final written exams

Professional Development
Guidance for New Faculty Members
• Diversifying classroom management and lecture delivery methods • New faculty members are eligible for visits from the department head and senior faculty members during lectures • Conducting personal interviews to assess faculty competence and teaching skills • Publishing research in international journals with impact factors, writing books, and participating in workshops and conferences
Faculty Professional Development
• The academic program is reviewed periodically to identify and address any shortcomings. • Annual evaluation of each module by the department chair or course coordinator. • Periodic faculty reviews of the academic program. • Establishment of an external advisory board for the department, comprising student representatives and course participants. • Periodic evaluation of faculty members by the department chair. • Student evaluation of faculty members via online surveys. • Faculty members' self-evaluation. • Student evaluation of a course term via online surveys. • Coordination with the college and university quality assurance unit to monitor the implementation of the academic program within the department.

8. Admission Criteria
1. The overall average for central admission, which must be within the established limits and in accordance with the directives of the Ministry of Higher Education and Scientific Research. 2. Personal interviews with applicants to document any speech, behavioral, or personality defects.

4. Key Sources of Information about the Program
The College's Quality Assurance Unit, through the University's Quality Assurance Unit, adheres to quality standards and strives to raise the scientific, intellectual, and skill levels, as well as the standards of scientific research, in accordance with the Ministry of Higher Education and Scientific Research's guidelines, which aim to enhance the efficiency of academic programs in line with international quality standards.

5. Program Development Plan
• Encouraging students to utilize medical textbooks. • Developing conversation, translation, and reading skills through the use of websites and other modern resources. • Encouraging students to familiarize themselves with key medical texts.

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Program Skills Outline

Year/Level	Course Code	Course Name	Basic or optional	Required program Learning outcomes											
				Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
First level First semester				√	√	√	√	√	√	√	√	√	√	√	√
				√	√	√	√	√	√	√	√	√	√	√	√
First level Second semester				√	√	√	√	√	√	√	√	√	√	√	√
				√	√	√	√	√	√	√	√	√	√	√	√
Second level First semester				√	√	√	√	√	√	√	√	√	√	√	√
				√	√	√	√	√	√	√	√	√	√	√	√
Second level Second semester				√	√	√	√	√	√	√	√	√	√	√	√
				√	√	√	√	√	√	√	√	√	√	√	√
Third level First semester				√	√	√	√	√	√	√	√	√	√	√	√
				√	√	√	√	√	√	√	√	√	√	√	√
Third level Second semester				√	√	√	√	√	√	√	√	√	√	√	√
				√	√	√	√	√	√	√	√	√	√	√	√
Forth level First semester	MPH24101	Medical Physics II	B	√	√	√	√	√	√	√	√	√	√	√	√
	MPH24102	Medical Image Processing	C	√	√	√	√	√	√	√	√	√	√	√	√
	MPH24103	Radiation Protection	B	√	√	√	√	√	√	√	√	√	√	√	□

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	MPH24104	Medical Physics III	**C**	√	√	√	√	√	√	√	√	√	√	√	√
	MPH24105	Biomaterials	**E**	√	√	√	√	√	√	√	√	√	√	√	√
	MPH24106	Graduation Project	**C**	√	√	√	√	√	√	√	√	√	√	√	√
Forth level Second semester	**MPH24207**	Image Analysis	**C**	√	√	√	√	√	√	√	√	√	√	√	√
	MPH24208	Professional Ethics	**B**	√	√	√	√	√	√	√	√	√	√	√	√
	MPH24209	Nuclear Medicine	**C**	√	√	√	√	√	√	√	√	√	√	√	√
	MPH24204	Medical Physics IV	**C**	√	√	√	√	√	√	√	√	√	√	√	√
	MPH24210	Neurophysics	**E**	√	√	√	√	√	√	√	√	√	√	√	√
	MPH24211	Medical Accelerators	**E**	√	√	√	√	√	√	√	√	√	√	√	√
	MPH24206	Graduation Project	**C**	√	√	√	√	√	√	√	√	√	√	√	√

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