



Ministry of Higher Education and Scientific Research  
Scientific supervision and evaluation device  
Department of Quality Assurance and Academic Accreditation  
Accreditation Department

# Academic program and course description guide

2024

the introduction:

The educational program is considered a coordinated and organized package of academic courses that includes procedures and experiences organized in the form of academic vocabulary, the main purpose of which is to build and refine the skills of graduates, making them qualified to meet the requirements of the labor market. It is reviewed and evaluated annually through internal or external audit procedures and programs such as the external examiner program.

The description of the academic program provides a brief summary of the main features of the program and its courses, indicating the skills that students are working to acquire based on the objectives of the academic program. The importance of this description is evident because it represents the cornerstone of obtaining program accreditation, and the teaching staff participates in writing it under the supervision of the scientific committees in the scientific departments.

This guide, in its second edition, includes a description of the academic program after updating the vocabulary and paragraphs of the previous guide in light of the latest developments in the educational system in Iraq, which included a description of the academic

program in its traditional form (annual, quarterly), in addition to adopting the description of the academic program circulated according to the book of the Department of Studies, 3/2906. On 5/3/2023 with regard to programs that adopt the Bologna Process as a basis for their work.

In this area, we can only emphasize the importance of writing descriptions of academic programs and courses to ensure the smooth conduct of the educational process.

Concepts and terminology:

Description of the academic program: The description of the academic program provides a brief summary of its vision, mission, and goals, including an accurate description of the targeted learning outcomes according to specific learning strategies.

**Course Description:** Provides a necessary summary of the most important characteristics of the course and the learning outcomes that the student is expected to achieve, demonstrating whether he or she has made the most of the available learning opportunities. It is derived from the program description.

**Program Vision:** An ambitious picture for the future of the academic program to be a developed, inspiring, motivating, realistic and applicable program.

**The program's mission:** It briefly explains the goals and activities necessary to achieve them, and also defines the program's development paths and directions.

**Program objectives:** These are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

**Curriculum structure:** All courses/study subjects included in the academic program according to the approved learning system (semester, annual, Bologna track), whether it is a requirement (ministry, university, college, or scientific department), along with the number of study units.

**Learning outcomes:** A consistent set of knowledge, skills, and values that the student has acquired after the successful completion of the academic program. The

learning outcomes for each course must be determined in a way that achieves the program objectives.

Teaching and learning strategies: They are the strategies used by the faculty member to develop the student's teaching and learning, and they are plans that are followed to reach the learning goals. That is, it describes all curricular and extracurricular activities to achieve the learning outcomes of the programme.

اسم الجامعة : جامعة الموصل  
الكلية / المعهد : كلية علوم  
القسم العلمي : قسم الفيزياء الطبية  
اسم البرنامج الاكاديمي او المهني : بكالوريوس فيزياء طبية  
اسم الشهادة النهائية : بكالوريوس في الفيزياء الطبية  
النظام الدراسي : فصلي  
تاريخ اعداد الوصف : 2024  
تاريخ ملء الملف : 2024

التوقيع: -  
اسم المعاون العلمي: ٢٠١ ر محمد هادي  
التاريخ: ٢٢/٤/٢٠٢٤

التوقيع: محمد هادي  
اسم رئيس القسم: د. محمود احمد محمد خضير  
التاريخ: ٢٢/٤/٢٠٢٤

دقق الملف من قبل  
شعبة ضمان الجودة والأداء الجامعي  
اسم مدير شعبة ضمان الجودة والأداء الجامعي:  
التاريخ:  
التوقيع:

مصادقة السيد العميد

أ.د.  
م.ياسر عادل الطائي

٢٠٢٤

٢٠٢٤ / ٤ / ٢٢

## **1. Program vision**

The department should be a pioneer in the field of medical physics and be distinguished at the local, regional and global levels, with a focus on education, training, services, applied research and community service.

## **2. Program message**

The department's mission includes preparing qualified graduates with knowledge and creativity in the specialty of medical physics who are able to interact with the requirements of the times and technology and contribute to building Iraqi society on sound scientific and moral foundations.

## **3. Program objectives**

The Department of Medical Physics aims to:

1. Providing the graduate with the necessary scientific knowledge in medical physics, which aims to deepen understanding of the methodology of analysis, criticism, and scientific research and use these skills to study and serve the community in the health and educational aspects.
2. Empowering the graduate with practical and research skills that qualify him to excel and succeed in his professional life, and to be able to enroll in distinguished graduate programs.
3. Enabling the student to train and gain practical experience on a wide range of modern technologies and using advanced scientific equipment in multiple medical physics specialties. Increase awareness of medical physics among the general public (society) and its role in advancing health, development and national production.
2. Developing the student's skills to use modern research sources to enable him to build the necessary scientific skills such as the skill of scientific writing, the skill of discussion, constructive criticism, and scientific communication.
3. Developing the department to be a distinguished center for medical physics research and graduate studies.
4. Preparing students to occupy jobs in the industrial sector, the government sector, and in the fields of medical physics, whether professional, research, or academic..

## Programmatic accreditation

Currently ABET  
Waiting for the ministerial accreditation standards that will be launched soon

## Other external influences

Pending ministerial accreditation standards

## Program structure

comments *	percentage	Study unit	Number of courses	Program structure
	4.6	11	5	Enterprise requirements
	08	2	1	College requirements
	94.6	227	42	Department requirements
The student requests summer training at the end of the sixth semester				summer training
				Other

\* Notes may include whether the course is core or elective.



## Program description

ECTS credits	Module Code	Module Name in English	Name of the academic subject	No.	Semester One
8.00	MPH-1101	Electricity and magnetism	Electric and magnetic	1	
8.00	MPH-1102	Analytical Chemistry	analytical chemistry	2	
2.00	SCI-101	Mathematics 1	Mathematics I	3	
8.00	MPH-1103	General Biology 1	General revival	4	
2.00	UOM-101	Arabic Language	Arabic	5	
2.00	UOM-104	Human Rights and Democracy	Human rights and democracy	6	

ECTS credits	Module Code	Module Name in English	اسم المادة الدراسية	No.	Semester Two
6.00	MPH-1204	Mechanics	ميكانيك	1	
6.00	MPH-1215	Mathematics 2	الرياضيات II	2	
6.00	MPH-1216	General Biology 2	احياء عام 2	3	
3.00	UOM-103	computer	حاسوب	4	
2.00	UOM-102	English Language	اللغة الانكليزية	5	
7.00	MPH-1217	Organic Chemistry	كيمياء عضوية	6	

ECTS credits	Module Code	Module Name in English	اسم المادة الدراسية	No.	Semester Three
6.00	MPH-2308	Biophysics	فيزياء حيائية	1	
6.00	MPH-2319	Optics	بصريات	2	
6.00	MPH-23010	Atomic physics	فيزياء ذرية	3	
5.00	MPH-23111	Physiology	فسلجة	4	

5.00	MPH-23112	Electromagnetic waves	موجات كهرومغناطيسية	5
2.00	UOM-201	Crimes of Baath Party	جرائم حزب البعث	6

ECTS	Module Code	Module Name in English	اسم المادة الدراسية	No.	Semester Four
6.00	MPH-24013	Medical imaging	التصوير الطبي	1	
5.00	MPH-24114	Molecular biology	بايولوجي جزيئي	2	
6.00	MPH-24115	Bioelectronics	الالكترونيات الحيوية	3	
3.00	MPH-24016	Healthy culture	الثقافة الصحية	4	
5.00	MPH-24017	Heat and Thermodynamic	حرارة وثرموداينمك	5	
5.00	MPH-24118	Phonetics Science	علم الصوتيات	6	

ECTS	Module Code	Module Name in English	اسم المادة الدراسية	No.	
5.00	MPH-35019	Medical Physics 1	فيزياء الطبية 1	1	Five
5.00	MPH-35120	Anatomy	تشريح	2	
4.00	MPH-35021	Biostatics	احصاء حيوي	3	
6.00	MPH-35122	Physics of Diagnostic radiology	فيزياء الاشعة التشخيصية	4	
6.00	MPH-35123	Laser Basics	اساسيات الليزر	5	
4.00	MPH-35024	<b>elective course1</b> ( Medical Immunology + Medical Bacteriology + Medical Parasitology + Genes and Diseases	اختياري 1	6	

ECTS	Module Code	Module Name in English	اسم المادة الدراسية	No.	
4.00	MPH-36125	Medical Terminology	مصطلحات طبية	1	Six
5.00	MPH-36126	Biochemistry	كيمياء حيوية	2	
6.00	MPH-36027	Physics of nuclear medicine	فيزياء الطب النووي	3	
6.00	MPH-36128	Medical laser applications	تطبيقات الليزر الطبية	4	
5.00	MPH-36129	Analoge electronics	الالكترونيات تماثلية	5	
4.00	MPH-36030	<b>elective course2</b> (cellular	اختياري 2	6	

		and genetics disorders + Medical Plants and Toxicology+ Medical Labrotory Analysis + medical Virology			
--	--	---	--	--	--

ECTS	Module Code	Module Name in English	اسم المادة الدراسية	No.	Seven
6.00	MPH-41131	Medical image processing and analysis	تحليل ومعالجة الصور الطبية	1	
5.00	MPH-47032	Medical instrumentation physics	فيزياء الاجهزة الطبية	2	
6.00	MPH-47133	Radiotherapy Physics	فيزياء العلاج الاشعاعي	3	
5.00	MPH-47134	Digital electronics	الالكترونيات الرقمية	4	
4.00	MPH-47035	<b>elective course3</b> ( Medical Antimicrobial + Biotechnology + Medical Labrotory instruments )	اختياري 3	5	
4.00	MPH-47036	Research Methodology	منهجية بحث	6	

ECTS	Module Code	Module Name in English	اسم المادة الدراسية	No.	Eight
6.00	MPH-48137	Medical Physics 2	الفيزياء الطبية 2	1	
6.00	MPH-48138	Neurophysics	فيزياء الاعصاب	2	
5.00	MPH-48039	Material science and nanotechnology	علم المواد والنانوتكنولوجيا	3	
5.00	MPH-48040	Biomaterials	مواد حيوية	4	
4.00	MPH-48041	<b>elective course4</b> (Physiology of Inficious diseases + Behavior and sensing from micro to human + Medical Bioinformatics	اختياري 4	5	
4.00	MPH-48142	Research Project	مشروع بحث تخرج	6	

## 2. Teaching and learning strategies

Theoretical, practical, and applied lectures, daily assignments, and discussions

## 3. Evaluation methods

Exams, assignments, daily assignments, discussions, laboratory reports and a graduation project

## 4. The teaching staff

### Faculty member

Preparing the teaching staff		Special requirements/skills (if any)	Specialize				Scientific rank
lecturer	staff		English	Chemistry	microbiology	Physics	
	2			2		2	<b>Professor</b>
	8			5	3	8	<b>Assistant Professor</b>
	14		2	7	5	14	<b>Instructor</b>
	8	1		7		8	<b>Assistant Instructor</b>

## **Professional developmen**

### **Orienting new faculty member**

Working to improve the academic and research capabilities and skills of faculty members through:

1. Guiding them to participate in teaching methods courses.
2. Holding training workshops, scientific meetings, and dialogue sessions.
3. Educating them on modern teaching methods.
4. Spreading a culture of continuous development and improvement to reach the best level of academic and professional performance.
5. Providing individual and group guidance programs for faculty members to overcome the difficulties that plague their professional lives.

### **Professional development for faculty members**

1. Developing faculty members' skills in academic, research and creative fields.
2. Supporting university faculty members in their educational, research and creative tasks.
3. Providing and developing diverse resources that contribute to achieving the above two goals.
4. Providing the appropriate professional environment for the creativity of the faculty member.
5. Supporting the faculty member's tasks in the field of community service.
6. Creating and developing information bases and resources related to faculty members.

## **Acceptance criterion**

**Admission is central**

## **The most important sources of information about the program**

Program development through

- Higher directives
- What new sciences are developed in the field of specialization

**Program development plan**

- Teamwork: Working within the group effectively and actively.
- Time management: Managing time effectively and setting priorities with the ability to work organized by appointments.
- Preparing scientific research and reports to analyze and criticize events.

### Program skills chart

Learning outcomes required from the programme												Basic learning activities Core learning activity	Course name	Course Code	Year/level
value		skills						knowledge							
2	1	2	1	2	1	2	1	2	1	2	1				
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Electric and magnetic	MPH-1101	<b>Semester 1</b>
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	analytical chemistry	MPH-1102	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	B	Mathematics I	SCI-101	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	General revival	MPH-1103	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	B	Arabic	UOM-101	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	B	Human rights and democracy	UOM-104	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Mechanical	MPH-1204	<b>Semester 2</b>
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	S	Mathematics II	MPH-1215	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	General biology 2	MPH-1216	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	B	Computer	UOM-103	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	B	English	UOM-102	

✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	organic chemistry	MPH-1217	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Life physics	MPH-2308	<b>Semester 3</b>
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	optics	MPH-2319	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Atomic physics	MPH-23010	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	S	Faslja	MPH-23111	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Electromagnetic waves	MPH-23112	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	B	Baath Party crimes	UOM-201	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Medical Imaging	MPH-24013	<b>Semester 4</b>
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Molecular biology	MPH-24114	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Bioelectronics	MPH-24115	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Health culture	MPH-24016	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Heat and thermodynamics	MPH-24017	



✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	S	Phonetics	MPH-24118	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Medical Physics 1	MPH-35019	Five
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	anatomy	MPH-35120	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	S	Biostatistics	MPH-35021	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Diagnostic radiology physics	MPH-35122	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Laser basics	MPH-35123	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	E	Optional 1	MPH-35024	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	S	medical terminology	MPH-36125	Six
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Biochemistry	MPH-36126	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Nuclear medicine physics	MPH-36027	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Medical laser applications	MPH-36128	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Analogue electronics	MPH-36129	

✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	E	Optional 2	MPH-36030	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Analysis and processing of medical images	MPH-41131	Seven
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Physics of medical devices	MPH-47032	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Physics of radiation therapy	MPH-47133	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Digital electronics	MPH-47134	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	E	Optional 3	MPH-47035	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Research methodology	MPH-47036	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Medical Physics 2	MPH-48137	Eight
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Neurophysics	MPH-48138	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Materials science and nanotechnology	MPH-48039	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Biomaterials	MPH-48040	

✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	E	Optional 4	MPH-48041	
✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	C	Graduation research project	MPH-48142	

