Academic Program Description Form

(Adopted Based on the Twinning Agreement with the University of Karbala - College of Applied Medical Sciences- Medical Physics and Medical Physics, Department of Sciences, in Accordance with the Bologna System)

University Name: Al-Warith Al-Anbiya

Faculty/Institute: Sciences

Scientific Department: Medical Physics

Academic or Professional Program Name: Bachelor Science

Final Certificate Name: Bachelor Science in Medical Physics

Academic System: Bologna System

Description Preparation Date: 1/9/2025

File Completion Date: 15/9/2025

Signature:

Head of Department Name: P.H.D. Shaymaa Hussein Nowfal

Date: 2025/9/15

The File is checked by:

Director of the Quality Assurance and University Performance Division:

Name: M.Sc. Ashraf Hussein Saleh AL-Salikhi

Date:2025/9/18

Signature

Approval of the Dean

shaymaa Hussein Nowfal

Undergraduate Degree Program Catalogue | 2025-2026 |

دليل البرنامج الدراسي

University of Warith Al-Anbiyaa

جامعة وارث الانبياء

كلية العلوم – قسم الفيزياء الطبية

Bachelor's Degree in Sciences- Medical Physics

بكالوريوس علوم – فيزياء طبية

Table of Contents | جدول المحتويات

1. Mission & Vision Statement

Vision Statement:

The future vision of the Department of Medical Physics is to:

1- Be a pioneer leading academic body in the specialty of medical physics in Iraq.
2- Establish a ground of cooperating in fruitful scientific research between the department and other medical and academic institutes locally and internationally.
3- Determine and maintain standards in the career of a medical physicist in the disciplines of diagnostic imaging, radiation oncology and nuclear medicine.

Mission Statement:

The mission of the Department of the Medical Physics lies in enhancing the medical profession, and accordingly the community, with qualified health professionals able to guarantee the best quality and effective diagnosis and treatment of patients in specialties such as radiotherapy, nuclear medicine, diagnostic imaging, radiation oncology, and other related specialties by reinforcing its students with a solid academic knowledge beside a clinical training capable of applying a mixture of physical concepts and techniques in medicine.

2. Program Specification

Program code:	MPH	**ECTS**	240
Duration:	4 levels, 8 Semesters	**Method of Attendance:**	Full Time

The bachelor's degree in medical physics is arranged to have graduates owing certain skills specialized to have their career in hospitals, and other clinics in relation to the fields of radiation oncology and nuclear medicine. It has four vital various levels of study within eight semesters. Each semester calculates 30 ECTS (The European Credit Transfer and Accumulation System).

The first Level instructs the students to have some fundamentals in some related fields of study that provide some basics and skills in topics related to Mechanics, electricity, human biology, mathematics, computer, English language and chemistry.

The second level of study exposes the students to more specialized modules in the fields of physics and biology as related to the specialty of medical physics. The core study of this specialty is greatly presented in the third and the fourth stages where medical physics is handled thoroughly.

The third level represents an essential stage in the medical physics program, where students begin focused study in the specialty. At this level, students study Medical Physics, Laser Fundamentals, Human Anatomy, Quantum Mechanics in Medicine, and Biochemistry. These courses aim to strengthen the scientific background of students and prepare them for advanced and applied medical physics studies.

The fourth level represents the advanced and applied stage of the medical physics program. In this level, students study Radiotherapy Physics, Physics of Nuclear Medicine, Medical Instrumentation Physics, Nanotechnology, and Research Project I. This stage focuses on the application of physical principles in diagnosis and treatment, the use of advanced medical technologies, and the development of research skills. The Research Project aims to enhance students' abilities in scientific investigation, data analysis, and academic writing, preparing them for professional practice and postgraduate studies in medical physics.

The type of studying hours is varied, as in having laboratory, practical, tutorial, seminar in addition to class hours. The estimation is also various dependent on the students' exams, quizzes, projects, seminars and other activities that are related to their specialty and in need for their community and the market requirements. Tutors encourages students from the very commencement of their education to have skills in presenting their activities as to fit the topic under discussion and the necessity of their existence in the healthcare centers and community.

3. Program Goals

This program aims at:

1. Assisting public and private healthcare fields with a highly trained technicians specialized in radiation related fields and armed with a solid background of knowledge.
2. Graduating members able to handle successfully an advanced level of study in scientific research related to the fields of study in medical physics.
3. Making its students cooperative members in healthcare centers who are adoptable to various circumstances.
4. Bringing into a community a verily ethically responsible technicians qualified to compete and to a be self-earners with a great communicative skill.

4. Student Learning Outcomes

A- Scientific knowledge which includes the knowing of:

1. The structure and function of the major organ systems with emphasis on content applicable to clinical diagnostic imaging and/or radiation oncology.
2. The radiation and radioactivity, its properties, units of measure, dosimeter measurement concepts and methods.

3. the radiation safety practices and procedures including the determination of radiation shielding requirements.

4. the operation and principles used in the systems and procedures associated with the clinical track.

B- Skills in which a Medical Physics graduate will be skilled in:

1. Performing the clinical support procedures required of a medical physicist.
2. Designing and completing independent research projects.
3. communicating effectively, both orally and in writing, with colleagues, faculty, scientific journals, and research funding agencies.
4. Retrieving, managing, and utilizing information for solving problems relevant to completion of research projects, or for the implementation of clinical operations or procedures. Graduates will be able to demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

5. Academic Staff

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Credits and GPA

University of Warith Al-Anbiyaa is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 student's workload, including structured and unstructured workload.

Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	A – Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيدجدا	80 - 89	Above average with some errors
	C – Good	جيد	70 - 79	Sound work with notable errors
	D – Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E – Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	مقبولبقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

Calculation of the Grade Point Average (GPA)

1. The GPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

   GPA of a 4-year B.Sc. degrees:

   GPA = [(1st module score x ECTS) + (2nd module score x ECTS) + ……] / 240

6. Curriculum/Modules

Semester 1 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH101	Mechanics	110	115	9	B	None
MPH102	General Biology	110	115	9	B	None
MPH103	Analytical Chemistry	78	97	7	B	None
UOWA101	Human Rights and Democracy	33	17	2	B	None
UOWA102	Computer Science1	48	27	3	C	None

Semester 2 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH1206	Organic Chemistry	78	97	7	C	None
MPH1207	Electricity and Magnetism	90	110	8	C	None
MPH1208	Mathematics	78	72	6	C	None
MPH1219	MATLAB	63	62	5	B	None
UOWA105	English Language I	33	17	2	B	None
UOWA103	Arabic Language I	33	17	**2**	**S**	None

Semester 3 | 30 ECT

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH2021	Heat and Thermodynamics	78	97	175	7	None
MPH23012	Analog and Digital Electronics	78	97	175	7	None
MPH2022	Optics	78	72	150	6	None
MPH2203	Medical Terminology	63	62	125	5	None
UOWA107	Computer Science II	48	27	75	3	None
UOWA102	The Crimes of Al-Baath Party	33	17	50	2	None

Semester 4 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH2204	Atomic Physics	90	110	8	B	None
MPH2202	Molecular Biology	78	97	7	C	None
MPH2205	Phonetics Science	78	72	6	C	None
MPH2201	Electromagnetic Waves	63	62	5	C	None
UOWA105	English Language II	33	17	2	S	None
UOWA106	Arabic Language II	33	17	2	B	None

Semester 5 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MP301	Medical Physics	90	110	8	C	None
MP302	Human Anatomy	78	72	6	C	None
MP303	Quantum Mechanics in Medicine	48	52	4	B	None
MP304	Biochemistry	78	72	6	B	None
MP305	Basics of Laser	78	72	6	C	None

Semester 6 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH3201	Physiology	63	62	5	C	None
MPH3202	Material Science	48	52	4	B	None
MPH3203	Medical Laser Application	63	62	5	C	None
MPH3204	Medical Imaging	63	62	5	C	None
MPH3205	Biostatistics	78	72	6	S	None
MPH3206	Physics of Diagnostics Radiology	63	62	5	C	None

Semester 7 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH401	Radiotherapy Physics	78	97	7	C	None
MPH402	Physics of Nuclear Medicine	78	97	7	C	None
MPH403	Medical Instrumentation Physics	78	72	6	C	None
MPH404	Research Project 1	78	72	6	C	None
MPH405	Nanotechnology	48	52	4	B	None

Semester 8 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH4201	Neurophysics	63	62	5	C	None
MPH4202	Medical Image Processing and Analysis	78	97	7	C	None
MPH4203	Environmental Pollution	48	52	4	B	None
MPH4204	Research Project 2	78	72	6	C	None
MPH4205	Biomaterials	48	52	4	B	None
WOU4206	Professional Ethics	48	52	4	S	None

7. Contact

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ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي