Undergraduate Degree Program Catalogue | 2024-2025 |

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

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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 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	**93**	**132**	**9**	**C**	None
MPH102	Analytical Chemistry	93	82	**7**	**C**	None
MPH103	General Biology	**93**	**132**	**9**	**C**	None
UOWA101	Human Rights and Democracy	**33**	**18**	**2**	**S**	None
UOWA102	Computer Science	**63**	12	2	**S**	None

Semester 2 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH1206	Organic Chemistry	**78**	**97**	**7**	**B**	None
MPH1207	Electricity and Magnetism	**78**	**97**	**7**	**B**	None

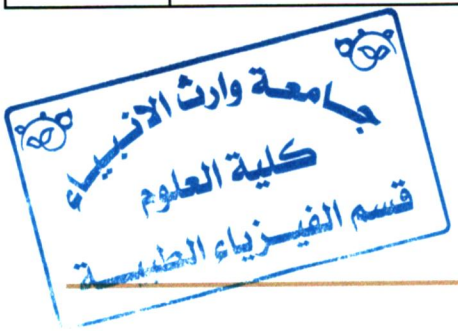
MPH1208	Mathematics	**48**	**102**	**6**	**B**	None
MPH1219	MatLab	**63**	**62**	**5**	**S**	Computer Science
UOWA105	English Language	**48**	**77**	**2**	**S**	None

Semester 3 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH23011	Heat and Thermodynamics	**78**	**97**	**7**	B	None
MPH23012	Optics	**78**	**97**	**7**	C	None
MPH23013	Analog and Digital Electronics	**63**	**87**	**6**	B	None
MPH23114	Physiology	**63**	**87**	**6**	C	General Biology
UOWA107	Professional Ethics	**33**	**67**	**4**	S	None

Semester 4 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH24116	Electromagnetic Waves	**48**	**77**	**5**	C	Electricity and Magnetism
MPH24117	Molecular Biology	**78**	**97**	**7**	C	General Biology
MPH24018	Medical Terminology	**33**	**92**	**5**	B	None
MPH24019	Atomic Physics	**78**	**122**	**8**	C	None
MPH24020	Phonetics Science	**33**	**92**	**5**	C	None



Semester 5 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH35021	Medical Physics	78	72	6	C	None
MPH35022	Anatomy	78	97	7	C	None
MPH35123	Physics of Diagnostic Radiology	78	97	7	C	Atomic Physics
MPH35024	Quantum Mechanics in Medicine	33	67	4	C	None
MPH35025	Basics of Laser	63	87	6	B	None

Semester 6 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH36026	Medical Imaging	78	97	7	C	None
MPH36027	Material Science	63	62	5	B	None
MPH36128	Medical Laser Application	78	97	7	C	Basics of Laser
MPH36129	Biochemistry	63	62	5	B	Organic Chemistry
MPH36130	Biostatics	63	87	6	B	None

Semester 7 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH47131	Medical Image Processing and Analysis	78	97	7	C	MatLab
MPH47132	Medical Instrumentation Physics	63	87	6	C	Analog and Digital Electronics
MPH47133	Radiotherapy Physics	78	97	7	C	Physics of Diagnostic Radiology
MPH47134	Nanotechnology	48	52	4	C	Material Science
CS401	Research Project I	78	72	6	C	None

Semester 8 | 30 ECTS

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
MPH48036	Neurophysics	78	72	6	C	None
MPH48037	Biomaterials	33	92	5	C	None
MPH48138	Physics of Nuclear Medicine	78	97	7	C	Atomic Physics
MPH48039	Environmental Pollution	63	87	6	B	None
CS402	Research Project II	78	72	6	C	Research Project I

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