

Al-Iraqia Science University - College of Science  
First Cycle – Bachelor’s Degree Department of Medical Physics Sciences





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### **Mission & Vision Statement | بيان الرؤية والرسالة**

#### **Vision Statement**

To prepare highly qualified and competent graduates in Medical Physics Sciences through an integrated curriculum that combines theoretical knowledge with practical applications in medical imaging, radiation therapy, and radiation protection, contributing effectively to the healthcare sector and scientific development.

#### **Mission Statement**

The Medical Physics Sciences Department is committed to providing high-quality education and training that enables students to understand, operate, and develop medical physics technologies safely and efficiently, with emphasis on ethical practice, patient safety, research skills, and community service.



### Program Specification | مواصفات البرنامج

- Program Title: Medical Physics Sciences
- Degree Awarded: Bachelor of Science (B.Sc.)
- Study Duration: 4 Years / 8 Semesters
- Study System: Full Time
- Total Credits: 240 ECTS
- Language of Instruction: English & Arabic
- Scientific Field: Medical Physics

The program is designed to equip students with fundamental and advanced knowledge in physics applied to medicine, including diagnostic imaging, radiation therapy, nuclear medicine, and radiation safety. The curriculum builds strong foundations in physics and mathematics during the first stages and progresses toward specialized medical physics applications in advanced levels.

### Program Goals | أهداف البرنامج

1. The program aims to:
2. Prepare qualified medical physics graduates capable of working in hospitals and medical centers.
3. Develop students' skills in operating and maintaining medical imaging and radiation therapy equipment.
4. Provide solid knowledge in radiation protection and safety standards.
5. Enhance analytical and problem-solving skills in medical physics applications.
6. Support scientific research and continuous professional development.
7. Promote ethical responsibility and teamwork in healthcare environments.



## Student Learning Outcomes | مخرجات تعلم الطلبة

Graduates of the Medical Physics Sciences program will be able to:

- Apply fundamental physics principles in medical applications.
- Understand the physical principles of diagnostic imaging systems.
- Work safely with ionizing radiation according to international standards.
- Analyze and solve technical problems related to medical devices.
- Communicate effectively within multidisciplinary medical teams.
- Engage in lifelong learning and professional development.

## Academic Staff | الهيئة التدريسية

- Assistant Professor Huda Najm Al-Deen M.Sc. in Physical Chemistry  
[hudanajim@baghdadcollege.edu.iq](mailto:hudanajim@baghdadcollege.edu.iq)
- Lecturer Walaa Issam Ph.D. in Laser Engineering  
[walaa.isam@baghdadcollege.edu.iq](mailto:walaa.isam@baghdadcollege.edu.iq)
- Lecturer Laith Abdul-Sattar Ph.D. in Physics Sciences  
[laith.abdulsatar@baghdadcollege.edu.iq](mailto:laith.abdulsatar@baghdadcollege.edu.iq)
- Assistant Lecturer Adel Nahi M.Sc. in Applied Mathematics  
[math79@baghdadcollege.edu.iq](mailto:math79@baghdadcollege.edu.iq)
- Assistant Lecturer Ahmed Nadhmi M.Sc. in Genetic Engineering  
[ahmed-nadhmi@baghdadcollege.edu.iq](mailto:ahmed-nadhmi@baghdadcollege.edu.iq)

## Credits, Grading and GPA | الاعتمادات والدرجات والمعدل

- Credit System: Bologna Process – ECTS
- Total Credits: 240 ECTS
- 1 ECTS = 25 Hours

Grading Scheme

GRADING SCHEME				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group (50 - 100)</b>	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	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
<b>Fail Group (0 - 49)</b>	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
Number 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 Cumulative Grade Point Average (CGPA)**

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

CGPA of a 4-year B.Sc. degree:

$$CGPA = [ (1st^{th} module score \times ECTS) + (2nd^{th} module score \times ECTS) + \dots ] / 240$$



Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSW I hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
						CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
Four	1	MPH22018	Materials Science	علم المواد	English	2			1	1		3	63	62	125	5.00	B	
	2	MPH22019	Laser Physics	فيزياء الليزر	English	2		2	1			3	78	97	175	7.00	C	
	3	KUS24020	Arabic Language 2	لغة عربية 2	Arabic	2						3	33	17	50	2.00	B	
	4	KUS24021	English Language 2	لغة انكليزية 2	English	2						3	33	17	50	2.00	B	
	5	KUS24022	Applications of Computer Sceince	تطبيقات علم الحاسوب	English	1		2				3	48	27	75	3.00	S	
	6	MPH22023	Medical imaging	تصوير طبي	English	2		2		1		3	78	72	150	6.00	C	
	7	MPH22024	Medical Physics 1	فيزياء طبية 1	English	2		2				3	63	62	125	5.00	C	
Total						13	0	8	2	2	0	21	396	354	750	30.00		

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSW I hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
						CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
Five	1	MPH31025	Biostatistics	احصاء حيوي	English	2						3	33	42	75	3.00	B	
	2	MPH31026	Medical Physics Devices1	فيزياء الاجهزة الطبية 1	English	2				1		3	48	52	100	4.00	C	
	3	MPH31027	Medical Physics 2	فيزياء طبية 2	English	2		2		1		3	78	72	150	6.00	C	
	4	MPH31028	Analogue Electronics	الالكترونيات تماثلية	English	2		2		1		3	78	72	150	6.00	C	
	5	MPH31029	Anatomy	تشريح	English	2		2				3	63	62	125	5.00	C	
	6	MPH31030	Nuclear Physics	فيزياء نووية	English	2		2		1		3	78	72	150	6.00	C	
Total						12	0	8	0	3	1	18	378	372	750	30.00		

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSW I hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
						CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
Six	1	MPH32031	Wave Physics	فيزياء موجية	English	2				1		3	48	52	100	4.00	B	
	2	MPH32032	Biological Sensor	متحسسات بايولوجية	English	2					1	3	48	52	100	4.00	C	
	3	MPH32033	Quantum Mechanics	ميكانيك الكم	English	2				1	1	3	63	62	125	5.00	E	
	4	MPH32034	Physiotherapy Techniques	تقنيات العلاج الطبيعي	English	2				1		3	48	52	100	4.00	S	
	5	MPH32035	Digital Electronics	الالكترونيات رقمية	English	2		2				3	63	87	150	6.00	C	
	6	MPH32036	Physiology	فسلجة	English	2		2			1	3	78	72	150	6.00	C	
	7	MPH32037	Scientific Research Methodology	منهجية البحث العلمي	Arabic	1						3	18	7	25	1.00	B	
Total						13	0	4	0	3	3	21	366	384	750	30.00		

**Semester 7 | 30 ECTS | 1 ECTS = 25 hrs**

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSW I hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
						CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
Seven	1	MPH41038	Medical Physics 3	فيزياء طبية 3	English	2		2		1		3	78	97	175	7.00	C	
	2	MPH41039	Medical Physics Devices 2	فيزياء أجهزة طبية 2	English	2		2		1		3	78	97	175	7.00	C	
	3	MPH41040	Laser in Medicine	الليزر في الطب	English	2				1	1	3	63	62	125	5.00	C	
	4	MPH41041	Radiation Protections	الوقاية من الإشعاع	English	2				1	1	3	63	62	125	5.00	C	
	5	MPH41042	Bio Fluid	موائع حيوية	English	2					1	3	48	52	100	4.00	C	
	6	KUS47043	Ethics of Scientific Reseach	اخلاقيات البحث العلمي	English	2						3	33	17	50	2.00	B	
Total						12	0	4	0	4	3	18	363	387	750	30.0		

**Semester 8 | 30 ECTS | 1 ECTS = 25 hrs**

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSW I hr/sem	SWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
						CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Semn (hr/w)							
Eight	1	MPH42044	Medical Physics 4	فيزياء طبية 4	English	2		2		1		3	78	72	150	6.00	C	
	2	MPH42045	Medical Image Analysis and Processing	تحليل ومعالجة صور طبية	English	2		2		1		3	78	72	150	6.00	C	
	3	MPH42046	Nuclear Medicine and Radiotherapy	الطب النووي والعلاج الإشعاعي	English	2		2		1		3	78	72	150	6.00	C	
	4	MPH42047	Neurophysics	فيزياء الأعصاب	English	2					1	3	48	52	100	4.00	C	
	5	MPH42048	Graduation Project	مشروع التخرج	English	2		2				3	63	137	200	8.00	B	
Total						10	0	8	0	3	1	15	345	405	750	30.0		