

Al-Karkh University of Science



First Cycle – Bachelor's degree (B.Sc.) – Department of Medical Physics



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1. Department Vision:

Establishing and improving a complete scientific department centered around outstanding scientific experiences that are in line with the labor market, satisfy the demands of scientific institutions, and adhere to scientific methods that compete with and keep up with comparable departments in domestic and foreign universities, in accordance with the Ministry's scientific directions.

2. Department Mission:

A new and qualitative addition to the field of medical physics through the use of cutting-edge scientific and methodical techniques, renowned qualitative research, state-of-the-art medical laboratories, and seasoned academic staff to qualify medical physics specialists with a high level of scientific and technical skill who help to advance this field and meet the demands of the labor market.

3. Department Objectives:

Graduating and qualifying a specialized cadre in the field of medical physics who are able to provide high-quality medical support services in the field of diagnosis and treatment (medical imaging using X-rays, magnetic resonance imaging, radiation therapy, and other related fields), as well as contributing to the

development of scientific and health research, opening new horizons and concepts in scientific research, and they have the ability to work in the health field and acquire administrative and scientific skills in this field.

4. Job description for graduates:

Assistant Physicist.

The department administration aspires to increase the number of classrooms, laboratories, and laboratory equipment, and to develop the department’s infrastructure to ensure the provision of the best scientific and recreational facilities for students. The department administration also seeks to open postgraduate studies and enhance scientific communication at the local and international levels.

5. Program Specification

Programme code:	BSc-MPH	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

6. Student Learning Outcomes

1-While all toxicology addresses the adverse effects that agents have on living organisms, clinical and medical toxicology play unique roles not often encountered in traditional toxicology practice or research.

2-The subset of toxicology focus on the immediate needs of patients suspected of being poisoned.

3-The toxicology require extensive knowledge of diseases and etiology as well as a thorough understanding of the effects of potential poisons, both of which are commonly used to make diagnoses.

4- medical toxicologists must consider three points—the substance involved, the toxic response, and the mechanism by which it occurs—in order to determine the best treatment options for each patient.

5- introduce participants to the basics of clinical and medical toxicology along with new and old tools that may be used by the clinical toxicologist.

Outcome 1

Identification of Complex Relationships

Graduates will be able to illustrate the usage of diverse medical devices and analyze data gets from these devices..

Outcome 2

Oral and Written Communication

Graduates will be able to formally communicate the results of biological /chemical and physical investigations using both oral and written communication skills.

Outcome 3

Laboratory and Field Studies

Graduates will be able to perform laboratory experiments and field studies, by using scientific equipment and computer technology while observing appropriate safety protocols.

Outcome 4

Scientific Knowledge

Graduates will be able to demonstrate a balanced concept of how scientific knowledge develops, including the historical development of foundational theories and laws.

Outcome 5

Data Analyses

Graduates will be able to demonstrate scientific quantitative skills, such as the ability to conduct simple data analyses.

Outcome 6

Critical Thinking

Graduates will be able to use critical-thinking and problem-solving skills to develop a research project and/or paper.

7.Academic Staff

الاسم	الشهادة العلمية	الدرجة العلمية	المنصب الاستاذ	الجنس
عامر باسم شعلان	دكتوراه	أستاذ		ذكر
صباح ابراهيم عباس	دكتوراه	أستاذ	رئيس القسم	ذكر
جعفر فاضل عودة	دكتوراه	أستاذ		ذكر
فاضل كريم فرحان	دكتوراه	استاذ		ذكر
نهاد خلف علي	دكتوراه	استاذ مساعد		ذكر
بسمة حسين حمد	دكتوراه	استاذ مساعد		انثى
اشرف محمد ابراهيم	دكتوراه	استاذ مساعد		ذكر
علي عبد الامير رشيد	دكتوراه	استاذ مساعد		ذكر
مازن محمد موات	دكتوراه	استاذ مساعد		ذكر
عبد المهيمن وسام فخري	دكتوراه	أستاذ مساعد		ذكر
مصطفى عبد الكريم	دكتوراه	أستاذ مساعد		ذكر

ذكر		مدرس	دكتوراه	بلال خالد جاسم
انثى		مدرس	دكتوراه	علياء ماجد يحيى
انثى		مدرس	دكتوراه	علياء عبد الرزاق عبد الجبار
انثى		مدرس	دكتوراه	نسمة عدنان جبر
انثى		مدرس	دكتوراه	رسل محمد عبد الله
ذكر		مدرس	دكتوراه	علي كتاب عطية
ذكر		مدرس	دكتوراه	مصطفى كاظم عبد
انثى	مقرر القسم	مدرس	ماجستير	كواكب جعفر رشيد
انثى		مدرس	دكتوراه	نورا انور عبد الزهرة
ذكر		مدرس	دكتوراه	حيدر غني عبد الزهرة
انثى		مدرس	دكتوراه	هوليا عبد الرسول
انثى		مدرس	دكتوراه	نورا حكمت مطشر
انثى		مدرس	ماجستير	زينب فالح نزال
ذكر		مدرس مساعد	ماجستير	وائل علي سعيد
ذكر		مدرس مساعد	ماجستير	اكرم عبدالله خلف
ذكر		مدرس مساعد	ماجستير	محمد عادل اسماعيل
انثى		مدرس مساعد	ماجستير	دانيا ظافر حميد
ذكر		مدرس مساعد	ماجستير	اوس خليل محمد
انثى		مدرس مساعد	ماجستير	فرح عبد الكافي لازم
انثى		مدرس مساعد	ماجستير	شيماء علي راهي
انثى		مدرس مساعد	ماجستير	تبارك محمد عواد

8.Credits, Grading and GPA

Credits

Al-Karkh University 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 hrs student 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	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
Fail Group (0 - 49)	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
<p>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.</p>				

Calculation of the Cumulative Grade Point Average (CGPA)

1. 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:

$$CGPA = [(1st\ module\ score \times ECTS) + (2nd\ module\ score \times ECTS) +] / 240$$

9. Curriculum /Modules

Semester 1 | 30 ECTS | 1 ECTS = 25 hrs

No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	TWSS	TWSSN	TWS	ECTS	Module Type	Prerequisite Module(s) Code
					hr/s em	hr/s em	hr/s em			
1	KUS11001	Mathematics	الرياضيات	English	63	62	125	5	B	
2	KUS11002	Fundamental of computer science	مبادئ علم الحاسوب	English	48	27	75	3	B	
3	KUS11003	Democracy and Human Rights	ديمقراطية وحقوق الانسان	Arabic	33	17	50	2	B	
4	SCI11004	General Biology	احياء عام	English	78	97	175	7	B	
5	SCI11005	General Chemistry	كيمياء عام	English	78	97	175	7	C	
6	MPH11006	Electricity	الكهربائية	English	63	87	150	6	C	
				Total	363	387	750	30		

Semester 2 | 30 ECTS | 1 ECTS = 25 hrs

No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	TWSS	TWSSN	TWS	ECTS	Module Type	Prerequisite
					hr/sem	hr/sem	hr/sem			
1	MPH12007	Mechanics	الميكانيك	English	78	97	175	7	C	
2	MPH12008	Magnetism	المغناطيسية	English	78	72	150	6	C	
3	MPH12009	Programming	برمجة	English	78	72	150	6	C	
4	KUS12010	Arabic Language	لغة عربية	Arabic	33	17	50	2	B	
5	KUS12011	English Language	لغة انكليزية	English	33	17	50	2	B	
6	SCI12012	General Physics	فيزياء عام	English	78	97	175	7	S	
				Total	378	372	750	30.00		

Semester 3 | 30 ECTS | 1 ECTS = 25 hrs

No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	TWSS	TWSSN	TWS	ECTS	Module Type	Prerequisite
					hr/se m	hr/se m	hr/se m			
1	KUS23016	Crimes Baath Regime in Iraq	جرائم نظام البعث في العراق	Arabic	33	17	50	2	B	
2	MPH21013	Differential Equations	معادلات تفاضلية	English	48	52	100	4	B	
3	MPH21014	Optics	بصريات	English	78	97	175	7	C	
4	MPH21015	Atomic Physics	فيزياء ذرية	English	78	97	175	7	C	
5	MPH21016	Electromagnetics	كهرومغناطيسية	English	48	52	100	4	C	
6	MPH21017	Thermodynamics	ثرموداينمك	English	78	72	150	6	C	
				T o t a l	363	387	750	30		

Semester 4 | 30 ECTS | 1 ECTS = 25 hrs

No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	TWSS	TWSSN	TWS	ECTS	Module Type	Prerequisite
					hr/sem	hr/sem	hr/sem			
1	MPH22018	Materials Science	علم المواد	English	63	62	125	5.00	C	
2	MPH22019	Laser Physics	فيزياء الليزر	English	78	97	175	7.00	C	
3	KUS24020	Arabic Language 2	لغة عربية 2	Arabic	33	17	50	2.00	B	
4	KUS24021	English Language 2	لغة انكليزية 2	English	33	17	50	2.00	B	
5	KUS24022	Applications of Computer Sciences	تطبيقات علم الحاسوب	English	48	27	75	3.00	S	
6	MPH22023	Medical imaging	تصوير طبي	English	78	72	150	6.00	C	
7	MPH22024	Medical Physics 1	فيزياء طبية 1	English	63	62	125	5.00	C	
				Total	396	354	750	30		

Semester 5 | 30 ECTS | 1 ECTS = 25 hrs

No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	TWSS	TWSSN	TWS	ECTS	Module Type	Prerequisite
					hr/sem	hr/sem	hr/sem			
1	MPH31025	Biostatistics	احصاء حيوي	English	33	42	75	3.00	B	
2	MPH31026	Medical Physics Devices1	فيزياء الاجهزة الطبية 1	English	48	52	100	4.00	C	
3	MPH31027	Medical Physics 2	فيزياء طبية 2	English	78	72	150	6.00	C	
4	MPH31028	Analogue Electronics	الالكترونيات تماثلية	English	78	72	150	6.00	C	
5	MPH31029	Anatomy	تشريح	English	63	62	125	5.00	C	
6	MPH31030	Nuclear Physics	فيزياء نووية	English	78	72	150	6.00	C	
				Total	378	372	750	30		

Semester 6 | 30 ECTS | 1 ECTS = 25 hrs

No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	TWSS	TWSSN	TWS	ECTS	Module Type	Prerequisite
					hr/sem	hr/sem	hr/sem			
1	MPH32031	Wave Physics	فيزياء موجية	English	48	52	100	4.00	B	
2	MPH32032	Biological Sensor	متحسسات بايولوجية	English	48	52	100	4.00	C	
3	MPH32033	Quantum Mechanics	ميكانيك الكم	English	63	62	125	5.00	E	
4	MPH32034	Physiotherapy Techniques	تقنيات العلاج الطبيعي	English	48	52	100	4.00	S	
5	MPH32035	Digital Electronics	الالكترونيات رقمية	English	78	97	175	7.00	C	
6	MPH32036	Physiology	فسلجة	English	78	72	150	6.00	C	
7	MPH32037	Scientific Research Methodology	منهجية البحث العلمي	Arabic	18	7	25	1.00	B	
				Total	363	387	750	30		

Semester 7 | 30 ECTS | 1 ECTS = 25 hrs

No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	TWSS	TWSSN	TWS	ECTS	Module Type	Prerequisite
					hr/sem	hr/sem	hr/sem			
1	MPH41038	Medical Physics 3	فيزياء طبية 3	English	78	97	175	7,00	C	
2	MPH41039	Medical Physics Devices 2	فيزياء اجهزة طبية 2	English	78	97	175	7,00	C	
3	MPH41040	Laser in Medicine	الليزر في الطب	English	63	62	125	5,00	C	
4	MPH41041	Radiation Protections	الوقاية من الاشعاع	English	63	62	125	5,00	C	
5	MPH41042	Bio Fluid	موائع حيوية	English	48	52	100	4,00	C	
6	KUS47043	Ethics of Scientific Reseach	اخلاقيات البحث العلمي	English	33	17	50	2,00	B	
				Total	363	387	750	30		

Semester 8 | 30 ECTS | 1 ECTS = 25 hrs

No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	TWSS	TWSSN	TWS	ECTS	Module Type	Prerequisite
					hr/sem	hr/sem	hr/sem			
1	MPH42044	Medical Physics 4	فيزياء طبية 4	English	78	72	150	6,00	C	
2	MPH42045	Medical Image Analysis and Processing	تحليل ومعالجة صور طبية	English	78	72	150	6,00	C	
3	MPH42046	Nuclear Medicine and Radiotherapy	الطب النووي والعلاج الاشعاعي	English	78	72	150	6,00	C	
4	MPH42047	Neurophysics	فيزياء الاعصاب	English	48	52	100	4,00	C	
5	MPH42048	Graduation Project	مشروع التخرج	English	63	137	200	8,00	C	
				Total	345	405	750	30		

10. Contact

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