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تفاصيل البرنامج الواحد		
MSc_Pharma	Program ID	رمز البرنامج
Master in Pharmacology	Program name	اسم البرنامج
Pharmacy	College Name	الكلية
Pharmacology and Toxicology	Department Name	القسم
https://drive.google.com/file	Program URL	الموقع الإلكتروني للبرنامج
Master	Degree Name	اسم الدرجة
Masters	Study Level	مستوى الدراسة
Full-time	Course Intensity	نوع الكورس
On campus	Study Mode	طبيعة الدراسة
-	MBA Program Type	
تفاصيل البرنامج		
-Pharmacology, toxicology, and Biomedical Sciences	Broad Subject Area	الموضوع العام
Pharmacology	Main Subject:	الموضوع الرئيسي
	Custom Subject	الموضوع اذا لم يكن مذكور
Pharmacology	Specialization	الاختصاص
Program Overview The Master's program in Pharmacology is a comprehensive two-year curriculum designed to offer advanced scientific knowledge in pharmacological sciences, toxicology, clinical applications, and research methodologies. Below is an overview of the program, organized by semester: Year One: Foundation Courses The first year of the program lays a strong	Program Description	وصف البرنامج



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foundation for advanced studies in
pharmacology. Core courses include:

First Year – First Semester

1. **Molecular Pharmacology**
 - Drug targets and receptor types (GPCRs, ion channels, enzymes, nuclear receptors)
 - Receptor mechanisms, signaling pathways, and drug-receptor interactions
 - Receptor desensitization, heterogeneity, and disease relevance
2. **Advanced Biopharmaceutics**
 - Drug absorption, solubility, bioavailability
 - Dosage regimen design
3. **Mechanistic Toxicology**
 - Toxicokinetics and toxicodynamics
 - Xenobiotic-induced cellular damage, oxidative stress, and apoptosis
4. **Advanced Medical Physiology**
 - Systemic physiology (cardiovascular, GIT, blood, endocrine, CNS)
 - Integration of physiological mechanisms and disease conditions
5. **Biostatistics**
 - Statistical methods in medical research
 - T-tests, ANOVA, probability distributions, regression analysis
6. **English for Scientific Research**
 - Research question formulation,



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source engagement

- Scientific writing, citation practices, and bibliography management

7. Advanced Pathophysiology

- Inflammation, hemodynamic disorders
- Cardiovascular and endocrine pathophysiology

First year-Second semester and the Second year: Specialization and Research

The second semester and the second years enable students to specialize in areas of interest and participate in research activities.

Key courses include:

First Year – Second Semester

1. Advanced Pharmacology I

- Autonomic drugs, cardiovascular and renal drugs
- Agents acting on smooth muscle, chemotherapeutics, vasoactive peptides, NO

2. Advanced Systemic Toxicology

- Risk assessment, carcinogenesis, developmental and reproductive toxicology
- Toxicity testing, system biology in toxicology

3. Advanced Pharmacokinetics and Drug Metabolism I

- Drug absorption, metabolism (Phases I & II), pharmacogenomics
- Role of cytochrome P450, pharmacodynamics, dose-time



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- relationships
4. **Advanced Clinical Biochemistry**
 - Metabolic disorders, advanced hepatic and renal function in pharmacology
 - Endocrine disorders (hypothalamus, pituitary, thyroid, gonads) with pharmacological correlations
 - Biochemical basis of drug-induced organ toxicity and therapeutic monitoring
 - Molecular biomarkers in inflammation, cancer, and metabolic syndrome
 - Omics-based approaches and precision diagnostics in clinical pharmacology
 5. **Research Methodology**
 - Study design, sampling, data collection, literature review
 - Scientific writing, journal selection, referencing, plagiarism awareness
 6. **Special Problem (Practical)**
 - Selected current topics in pharmacology (practical application)
 7. **Seminar**
 - Student-led presentation and discussion of selected pharmacology topics

Research Component

In the second year, students undertake a structured research component that includes practical work, seminars, and formal training in research methodology. Under the



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supervision of a faculty mentor, each student develops and executes an independent research project. This work typically culminates in the preparation of a thesis or a comprehensive research report, which is presented and defended before an academic panel. Research topics may span various areas of pharmacology and toxicology, including drug metabolism, toxicological risk assessment, pharmacokinetics, or the evaluation of therapeutic agents. The research component is designed to enhance students' critical thinking, data analysis, and scientific communication skills.

Program Outcomes of Master of Science in Pharmacology

1. Knowledge

Graduates will be able to:

- Demonstrate in-depth understanding of the principles and mechanisms of pharmacology, toxicology, pharmacokinetics, and pathophysiology.
- Describe advanced concepts in drug action, receptor signaling, biotransformation, and toxicological assessment.



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- Apply scientific and regulatory knowledge relevant to drug discovery, development, and safety evaluation.

2. Cognitive Skills

Graduates will be able to:

- Critically evaluate scientific literature and experimental data in pharmacological and toxicological sciences.
- Design and execute independent research projects using appropriate scientific methodology and statistical analysis.
- Integrate theoretical and practical knowledge to solve complex problems related to drug efficacy, toxicity, and therapeutic use.

3. Interpersonal Skills and Responsibility

Graduates will be able to:

- Demonstrate professional and ethical responsibility in research and practice, including adherence to publication ethics and safe laboratory conduct.
- Work effectively both independently and as part of a multidisciplinary team in academic, clinical, or industrial settings.
- Reflect on their learning and research practices to support continuous professional development.

4. Communication, Information Technology, and Numerical Skills



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Graduates will be able to:

- Communicate scientific information clearly and effectively through written reports, oral presentations, and visual data.
- Utilize modern information technology tools for literature search, data analysis, and scientific documentation.
- Apply appropriate biostatistical techniques for data interpretation in pharmacological and toxicological research.

5. Psychomotor Skills (if applicable)

Graduates will be able to:

- Perform laboratory techniques relevant to pharmacological and toxicological investigations with precision and safety.
- Operate analytical and diagnostic instruments commonly used in biomedical and pharmaceutical laboratories.

/ https://uomosul.edu.iq/en	-	موقع الجامعة الالكتروني
pgaffairs.ph@uomosul.edu.iq	University Official Website	بريد الالكتروني للاستفسار
<ol style="list-style-type: none"> 1. What are the admission requirements for the Master's program in Pharmacology? 2. What are the core and elective courses offered in the program, and how do they prepare students for their future careers? 3. What research opportunities are available to students, and how can they get involved in ongoing projects or initiate their own 	<p>Get more details (email)</p> <p>Question 1/5</p>	<p>خمس أسئلة عن البرنامج</p>



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<p>research?</p> <p>4. What career support services are provided to help students transition from the program to professional roles in the pharmacology field?</p> <p>5. What types of workshops are available for Master's students in Pharmacology, and how do they enhance their learning experience?</p>		
<p>1. Generally, applicants require a Bachelor's degree in Pharmacy, Medicine, or a related biomedical field, along with a good academic standing. Admission is based on a competitive written exam covering pharmacology and toxicology disciplines.</p> <p>2. Core courses include Molecular Pharmacology, Advanced Pharmacology, Systemic Toxicology, Biopharmaceutics, Pharmacokinetics, Clinical Biochemistry, and Research Methodology. These provide strong theoretical and practical foundations for careers in pharmaceutical research, regulatory science, and academia. The program does not include electives, reflecting a focused curriculum.</p> <p>3. Students engage in research during the second year through a faculty-supervised project (Special Problem), supported by coursework in research methodology and seminars. Topics may include drug metabolism, toxicological screening, or pharmacogenomics. Students can also align with ongoing departmental research.</p> <p>4. While formal career services are not detailed, students benefit from close faculty mentorship, research presentation opportunities, and skills in</p>	<p>Answer ٥/١</p>	<p>خمسة اجوبة عن البرنامج</p>



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<p>scientific writing and publishing—preparing them for roles in industry, academia, or PhD programs.</p> <p>5. Master's students participate in structured workshops embedded within courses, such as biostatistics, scientific writing, lab skills, and research ethics. These enhance their analytical, communication, and technical competencies.</p>		
<p>1st semester: 13 unit 2nd semester: 13 unit</p>	<p>- -</p>	<p>Duration Unit: الوحدات</p>
<p>Years</p>	<p>-</p>	<p>Duration Type نوع البرنامج</p>
<p>September the 1st</p>	<p>Start Month-</p>	<p>بداية البرنامج (شهر)</p>
<p>يوم: ٠٩</p>	<p>Application Deadline</p>	<p>موعد انتهاء التقديم للبرنامج</p>
<p>شهر: ٠٦</p>		
<p>سنة: ٢٠٢٤</p>		
<p>Iraqi Dinar (IQD)</p>	<p>Fees Currency :</p>	<p>العملة</p>
<p>For Iraqi students: 3.500.000 IQD Per year For international Students: 1.500.000 - 3.000.000 IQD Per year</p>	<p>Price Information</p>	<p>معلومات الاجور</p>
<p>متطلبات الدخول للكورس Entry Requirements</p>		
<p>Admission to the Master's in Pharmacology and Toxicology program is based on a general competitive written examination that evaluates applicants' foundational knowledge across core areas of pharmaceutical and biomedical sciences. The exam is designed to ensure that candidates possess the academic background necessary for success in advanced pharmacological and toxicological studies. It typically includes content from the following subjects:</p> <ul style="list-style-type: none"> Pharmacology Toxicology 	<p>Exam Type: Paper-based Exam</p>	<p>نوع الامتحان</p>



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The exam may consist of multiple-choice questions (MCQs), short-answer , and/or essay-type questions , with emphasis on critical thinking, problem-solving, and application of scientific knowledge.			
Graduation Certificate Nomination Letter from the applicants' Job		Entry Requirements (Other) :	متطلبات اخرى
1.750.000 IQD Per Year	Min Total Tuition Fees (Domestic) :	الحد الأدنى لإجمالي الرسوم الدراسية (المحلية):	
3.500.000 IQD Per Year	Max Total Tuition Fees (Domestic) :	الحد الأقصى لإجمالي الرسوم (المحلية):	
1.750.000 IQD Per Year	Min Total Tuition Fees (Domestic, In State) :	الحد الأدنى لإجمالي الرسوم الدراسية (المحلية، داخل الولاية):	
3.500.000 IQD Per Year	Max Total Tuition Fees (Domestic, In State) :	الحد الأقصى لإجمالي الرسوم الدراسية (المحلية، داخل الولاية):	
1.750.000 IQD Per Year	Min Total Tuition Fees (Domestic, Out of State)	الحد الأدنى لإجمالي الرسوم الدراسية (المحلية، خارج الولاية)	
3.500.000 IQD Per Year	Max Total Tuition Fees (Domestic, Out of State) :	الحد الأقصى لإجمالي الرسوم الدراسية (المحلية، خارج الولاية):	
1.500.000 IQD Per year	Min Total Tuition Fees (International) :	الحد الأدنى لإجمالي الرسوم الدراسية (الدولي):	
3.000.000 IQD Per year	Max Total Tuition Fees (International) :	الحد الأقصى لإجمالي الرسوم الدراسية (الدولي):	
Iraqi Dinar (IQD)	Tuition Fee - Currency	الرسوم الدراسية - العملة :	
NO	Are candidates required to submit references or letter(s) of recommendation for acceptance?	هل يتعين على المرشحين تقديم مراجع أو خطابات توصية للقبول؟	
NO	Are candidates required to submit an essay (s) for acceptance?	هل يتعين على المرشحين تقديم مقال (مقالات) للقبول (بروبوزال)؟	
2 years	Minimum Professional Experience (in years) :	الحد الأدنى من الخبرة المهنية (بالسنة)	
Financial Aidالدعم المالي			



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NO	Is there a school sponsored scholarship financial aid?	هل هناك منحة دراسية أو مساعدات مالية ترعاها الكلية أو القسم؟
Not applicable	Annual school budget scholarships:	ميزانية الكلية أو القسم السنوية لجميع الدراسية:
Not applicable	Currency:	العملة
Not applicable	Scholarship Information	معلومات المنحة
Program Statistics احصائيات البرنامج		
	Students per Class :	الطلاب لكل فصل :
	Average age (in years) :	معدل عمر الطلبة
	Average years of work experience at managerial level :	متوسط سنوات الخبرة في العمل على المستوى الإداري:
	Percentage of international students :	نسبة الطلبة الاجانب
	Percentage of women :	نسبة الاناث
50 and more	Average GMAT score for Your cohort :	معدل درجات التخرج
1,500,000	Average salary after graduation :	متوسط الراتب بعد التخرج :
Variable	Percent employment after graduation :	نسبة التوظيف بعد التخرج:
-	Program accreditations :	اعتمادات البرنامج (الاعتمادية)
2	Average work experience (in years) :	متوسط الخبرة العملية (بالسنوات):
i	Number of nationalities in current cohort :	عدد الجنسيات في وجبة التخرج الحالي :
Campus Details تفاصيل الكلية أو القسم		
كلية الصيدلة / فرع الأدوية و السموم	Institution Profile Name Display :	اسم الكلية أو القسم
2025	Foundation Year :	سنة التأسيس



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Current Logo :

شعار الكلية او القسم



علما ان هذه المعلومات لكل برنامج اكايمي في الجامعة

1st semester

Subject	Unit
Molecular Pharmacology I	2
Advanced Biopharmaceutics I	2
Mechanistic Toxicology	2
Advanced Medical Physiology	2
Advanced Pathophysiology II	2
Biostatistics	1
English Language	2

2nd semester

Subject	Unit
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Mark	Grade
90-100	Excellent
80-89	Very good
70-79	Good
60-69	Fair
50-59	Pass
0-49	Fail



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Advanced Pharmacology I	2
Advanced Systemic Toxicology	2
Advanced Clinical Pharmacokinetic and Drug Metabolism I	2
Advanced Clinical Biochemistry I	2
Special Problem	2
Scientific Research	1
Seminar	Pass

Thesis: Units: 10

