



The University of Jordan

Accreditation & Quality Assurance Center

Program Specifications

Program title:

Analytical Toxicology

1	Program Title	Analytical Toxicology
2	Program Code	
3	Awarding Institution	The University Of Jordan
4	Level of Study	
5	Final Qualification	
6	Faculty	Faculty Of Medicine
7	Department	Pathology, Microbiology and Forensic Medicine.
8	Other Department(s) involved in teaching the program	
9	Mode of Attendance(e.g., full time)	Full time
10	Duration of the Program	4-6 semesters
11	Credit hours/ contact hours	33 hours
12	Language of Instruction	English
13	No. and date of approval by the Ministry of Higher Education	
14	No. and date of national accreditation of the program	
	Program capacity of students/ year	16
	Other accreditations of the program	
15	Date of production/revision	8/2/2017
16	No. of current students	2
17	Program Director (name, phone numbers & email)	Prof. Abdelkader Battah Phone Number: 23500 E-mail: akbattah@ju.edu.jo

18. Background to the program and subject area:

Bachelor degree in:
1- Medicine and Surgery
2-Chemistry and applied Chemistry
3- Pharmacy
4- Medical analysis
5- Veterinary medicine
6-Biotechnology
7-Genetic Engineering
8-environmental sciences.

19. Vision and Mission statements of the program:**Vision:**

Qualify competent experts graduates in the field of analytical toxicology

Mission:

Educate and train students enrolled in the master program to be able after graduation to work in laboratories in the field of analytical toxicology including forensic, clinical, environmental and research and development in pharmaceutical industry.

20. Reasons behind developing this program:

Need for Qualified competent analytical toxicologists

21. Program aims:

Supply students with sufficient knowledge, training and research in different aspects of toxicology including basic toxicology, chemical toxins, analytical toxicology principle, instrumentation and applications, environmental toxicology, forensic medicine and sciences, statistics, pathology, and other elective courses as well as conduct a research project in the field for the research tract students.

22. Program Intended Learning Outcomes:

It is expected that the program will provide opportunities for students to develop and demonstrate knowledge and understanding, skills and competencies and other properties in the following fields:

1. Able to work in all types of toxicology laboratories including clinical, forensic, environmental and research and development in pharmaceutical industry
2. Able to isolate toxins from biological and other samples
3. Able to select suitable analytical toxicological methods to analyze chemical toxins
4. Able to read toxicological results and interpret them
5. Participate in teaching and training medical laboratory students in community colleges and universities
6. Conduct researches in the field

23. Teaching, learning and assessment methods:

Development of the learning outcomes is promoted through the following teaching and learning methods:

•Seminars, Discussions, case presentation, Home work and Laboratory work.

Opportunities to demonstrate achievement of the learning outcomes are provided through the following assessment methods:

Exams, Homework and assignments.

24. Reference points:

The learning outcomes have been developed to reflect the following points of reference:

Competency and proficiency by passing the exams for each course and passes the comprehensive exam for those student in the comprehensive tract or passes the master thesis exam in the students in research tract

25. Program regulations:

Regulations concerning the program. Can include a link to such detailed regulations.

Graduate studied Regulations

26. Study plan:**1- Program requirements:****A- Obligatory courses**

Course code	Course name	Credit hours		Prerequisites
		Theoretical	Practical	
0501701	علم السموم	3	-	
0501702	السموم الكيميائية	3	-	
0501703	علم السموم التحليلي	2	3	
0501704	تحليل السموم الكيميائية	1	6	0501703
0501707	السموم البيئية والطبيعية	2	3	
0501710	تقييم وطرق في علم السموم	-	9	0501704
0501706	علم السموم الجزيئي التطبيقي	2	3	
0501709	العلوم الجنائية	3	-	

B- Elective courses

Course code	Course name	Credit hours		Prerequisites
		Theoretical	Practical	
0301737	الاحصاء الحيوي	3	-	-
0501711	تدريب عملي في مختبرات السموم	-	9	0501704
0501712	النوعية والامان بالمختبر	1	6	0501703
0501705	علم السموم الجزيئي	3	-	-
0501708	الطب الشرعي	3	-	-

27. Field Experience:

Description, timing and number of credit hours:

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28. Project/research:

Description, timing and number of credit hours:

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29. Program Learning Outcome Mapping Matrix

Course code	PLO 1	PLO 2	PLO 3	PLO4
0501701	<p>A1. Know and understand the definitions related to the scope and application of toxicology.</p> <p>A2. Understand the different Toxicokinetics and Toxicodynamics factors that influence toxic responses</p> <p>A3. Realize the duties and application of toxicology discipline</p>	<p>B1. Build up knowledge and scientific skills regarding the application of general toxicology principles in the different branches of toxicology.</p>	<p>C1. Acquire knowledge of the fundamental principles of toxicology that are essential to different application of toxicology.</p> <p>C2. Know the outlines of different types of application and discipline of toxicology</p> <p>C3. Understand the major mechanisms of toxic responses</p>	<p>D1. How to identify and evaluate factors influencing types of toxic response.</p> <p>D2. Basic principles of management of acute poisoning.</p> <p>D3. Principles of different applications of toxicology disciplines.</p> <p>D4. How to research the literature to answer questions regarding toxicology and toxicity.</p> <p>D5. Evaluate data regarding inter-related scientific principles to understand how and why processes and events with critical evaluation of current literature.</p> <p>D6. Compose and practice effective written and oral communication regarding issues in this toxicology course.</p>

0501702	<p>A1. Describe the toxic responses of toxins on various organ systems.</p> <p>A2. Describe the toxic responses of selected classes of substances.</p> <p>A3. Identify the major substance of abuse and comprehend laws governing its use</p> <p>A4. Demonstrate an understanding of adverse effect of toxins.</p> <p>A5. Realize the Basic principles of management of intoxication with these toxins</p> <p>A6. Research the literature to identify toxicity and suggest outline of precautions.</p>	<p>Student is expected to Build up knowledge and scientific skills regarding the types and sources of chemical toxins, their pathophysiology of intoxication and manifestation, their principle investigation, precaution and management.</p>	<p>C1. Acquire knowledge about the basic principles of the pathophysiology of intoxication, manifestation and management</p> <p>C2. Recognize common poisons, circumstance of poisoning and their target tissue.</p> <p>C3. Evaluate the toxicity and methods of investigation.</p>	<p>D1. Know and understand the principles of pathophysiology of intoxication by different chemical on biological systems.</p> <p>D2. Recognize the nature and sources of toxins, routes of exposure, clinical manifestation of toxicity and the principles lines of management and precaution</p> <p>D3. Suggest suitable method for investigating poisoning with toxins including poison identification and detection in biological samples and what are the specific analytical techniques applied.</p>
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0501706	<p>1. Know and understand the definitions related to the scope and application of applied molecular toxicology.</p> <p>2. Understand the different factors that influence techniques used in molecular toxicology analysis</p> <p>3. Realize the duties and application of applied molecular toxicology disciplines</p>	<p>1. How to identify and evaluate factors influencing techniques used in molecular toxicology analysis</p> <p>2. Basic principles of techniques used in molecular toxicology analysis</p> <p>3. Principles of different applications of techniques used in molecular toxicology analysis</p> <p>4. How to research the literature to answer questions regarding techniques used in molecular toxicology analysis</p> <p>5. Evaluate data regarding inter-related scientific principles to understand how and why processes and events with critical evaluation of current literature.</p> <p>6. Compose and practice effective written and oral communication regarding issues in this techniques used in molecular toxicology analysis course</p>	<p>build up knowledge and scientific skills regarding the application of techniques used in the different branches of molecular toxicology analysis.</p>	<p>Acquire knowledge of the fundamental principles of techniques used that are essential to different application in molecular toxicology analysis.</p> <p>2. Know the outlines of different types of application and discipline of techniques used in molecular toxicology analysis.</p>
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0501707	A1. Apply chemistry techniques in analysis of environmental pollutants at trace level using simple and advance techniques with emphasis on safety and good laboratory practice	B1. Understand the basic chemistry behind separation techniques used in toxicology laboratories. B2. Appreciation of different techniques in environmental toxicological analysis	C1. Describe the toxicity of the environmentally important gases in the atmosphere. C2. Describe the effects of anthropogenic pollutants on the troposphere and stratosphere and relate this knowledge to the understanding of major atmospheric pollution issues, namely ozone depletion, the greenhouse effect and photochemical smog. C3. Explain the main mechanisms of action of representative examples of environmental toxicants in causing a toxic response in living organisms.	Have the ability to conduct analysis using the available instruments and apply the techniques learned in drugs analysis
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0501703	<p>A .Knowledge and Understanding: Student is expected to Apply the different techniques of analytical chemistry in the extraction and detection of poisons using simple and advance techniques with emphasis on safety and good laboratory practice.</p>	<p>B1. Understand the basic chemistry behind separation techniques used in toxicology laboratories. B2. Appreciation of chromatographic and spectroscopic in toxicological analysis.</p>	<p>C1.Describe principles and methods of importance to and carry out toxicological analysis by manipulating extraction conditions and instruments parameters. C2. Practice writing experimental reports. C3. Have ability to conduct good laboratory practice in toxicological analysis. C4. Be able to solve analytical problems. C5. Laboratory skills development by direct supervision of students' experimental work and marked</p>	<p>D1. Have the ability to conduct analysis using the available instruments and apply the techniques learned in drugs analysis.</p>
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30. Educational facilities and support for the program teaching-learning process:

a- Facilities and laboratories (include name of lab, its area and student's capacity):

Toxicology Lab-16

b- Supporting staff (include name, work place, position, specialty):

نسرین المیخی	كلية الطب / مختبر السموم	مشرفة مختبر	ماجستير كيمياء
نور العتوم	كلية الطب / مختبر السموم	مشرفة مختبر	ماجستير كيمياء
خلود فريحات	كلية الطب / مختبر السموم	مشرفة مختبر	بكالوريوس علوم طبية مخبرية

c- Tools and equipment:

d- Faculty members:

No.	Name	D.O.B	Nationality	Specialty & sub-specialty	University of graduation & Year of graduation (of most recent qualification)	Qualifications	Academic rank, date obtained and donor university	Course/s that will be taught
1.	أ.د. عبد القادر بطاح	1957/2/13	اردني	علم السموم السريري والمخبري	جلاسوكو/1989 دكتوراه	دكتوراه	استاذ / الجامعة الأردنية 2012/12/24	Toxicology, chemical toxins, environmental toxicology, method development, interpretation in toxicology
2.	إ.د. كمال الحديدي	1958/8/8	اردني	علم السموم السريري والمخبري	جلاسوكو // دكتوراه 1991	دكتوراه	أستاذ / الجامعة الأردنية 2005/1/3	Analytical Toxicology, chemical toxins analysis, method development, interpretation in toxicology
	أ.د. عماد العبدالات	1963/4/6	اردني	الطب الشرعي والأمراض	جلاسوكو/2002 دكتوراه	دكتوراه	أستاذ / الجامعة الأردنية	Forensic medicine and Forensic sciences
	د. حسن عبد الرحمن	1955/12/19	اردني	الطب الشرعي والبصمة الوراثية	ستراثكلاند / غلاسكو/ 1993	استاذ مشارك	استاذ مشارك / الجامعة الأردنية 1999/12/15	Molecular toxicology

d. Library materials:

Library material	No.	Available for		
		Faculty members	Students	Faculty and students
Books				

Journals				
E-books				
E-journals				
Databases				

Entities that offer facilities to receive practical and field experiences:

31. Ways that are followed for program quality assurance:

1. What processes are followed for evaluation of teaching and learning experiences, assessment methods, and the effectiveness of the curriculum or study plan:
Exams, Homework and assignments.
2. What processes are followed to obtain feedback from students enrolled in the program about the quality of teaching and learning experiences provided:
3. What processes are followed to develop the skills, knowledge and capabilities of faculty members:
4. What indicators and standards are used to guarantee commitment to quality in the program:

32. Student development over the course of study

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33. Entrance Requirements

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34. Four prestigious universities have the same programme

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35. An official document of statistics and surveys issued by official bodies show the unemployment rate for this specialization

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Program Director: ----- Signature: ----- Date: -----

Head of Department: ----- Signature: ----- Head of
curriculum committee/Faculty: ----- Signature: -----

Admission and Registration Unit: ----- Signature: -----

Accreditation and Quality Assurance Center: ----- Signature: -----

Dean: ----- Signature: -----

Faculty of Graduate Studies: -----Signature: -----

Head of curriculum committee/University: ----- Signature: -----

Copy to:

Head of Departments
Assistant Dean for Quality Assurance
Program File
Accreditation and Quality Assurance Center