



مركز الاعتماد
و ضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER



The University of Jordan

Accreditation & Quality Assurance Center

Course Syllabus

Course Name:
Analysis of Chemical Toxins

1	Course title	Analysis of Chemical Toxins
2	Course number	0531704
3	Credit hours (theory, practical)	3.0
	Contact hours (theory, practical)	
4	Prerequisites/corequisites	Analytical Toxicology (0501703) Chemical Toxins (0507102).
5	Program title	
6	Program code	
7	Awarding institution	The University of Jordan
8	Faculty	Medicine
9	Department	Pathology, Microbiology and Forensic Medicine
10	Level of course	2
11	Year of study and semester (s)	1 st Semester 2017/2018
12	Final Qualification	
13	Other department (s) involved in teaching the course	
14	Language of Instruction	English
15	Date of production/revision	Dec.2016

16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.

17. Other instructors:

Office number:210

Office hours					
Day	Sunday	Monday	Tuesday	Wednesday	Thursday
Time	-----	13:00 – 15:00	-----	9:00 – 12:00	-----

phone numbers 23494

email addresses: khadidi@ju.edu.jo

18. Course Description:

Analysis of Chemical Toxins course deals with specific subject in analytical toxicology for poisons commonly seen in forensic medicine. It contains applications on biological samples, their types, preservation, and related data collection either in postmortem cases, drug of abuse and clinical poisoning cases. Also it deals with specific method of poison isolation purification identification and quantification using specialized instruments.

19. Course aims and outcomes:**A- Aims:**

Expose and introduce the students to the application of analytical chemistry techniques in the field of poisons analysis and to demonstrate the effect of samples and instruments on the forensic toxicology results

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ... Successful completion of the course should lead to the following outcomes:

A. Knowledge and Understanding: Student is expected to:

A₁. Apply the analytical chemistry techniques in the field of poisons analysis and to demonstrate the effect of samples and instruments on the forensic toxicology results.

B. Intellectual Analytical and Cognitive Skills: Student is expected to:

B₁. Understand the concept of forensic toxicology science and the role of toxicology in medico-legal cases.

C. Subject- Specific Skills: Students is expected to:

C₁. Have the ability to apply the techniques learned; know the limitations of forensic toxicological analysis.

D. Transferable Key Skills: Students is expected to be able to:

D₁. Extract different poisons from various forensic samples and conduct appropriate presumptive tests.

D₂. Select appropriate analytical techniques.

D₃. Interpret analytical results in context of forensic concept.

D₄. Appreciate the importance of sample collection and sample preparation for poison and drug analysis.

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Introduction to Analysis of Chemical Toxins.	1			Lecture	
A. Sample and sampling in forensic toxicology.	2			Presentation, Discussion	All references listed below.
B. Identify the biological samples (Blood and Urine) and their containers.	2			Laboratory work	
A. Approach to forensic toxicology analysis.	3			Presentation, Discussion	Laboratory Manual
B. Identify unknown drug in postmortem (Blood OR Urine OR VH) using the all techniques learned in analytical toxicology course.	3			Laboratory work	
A. Approach to forensic toxicology analysis.	4			Presentation, Discussion	All references listed below.

B. Qualitative and Quantitative analysis of alcohol in biological samples (Blood AND/OR Urine AND/ OR VH) by GC/FID.	4			Laboratory work	
A. Forensic toxicology and Postmortem toxicology.	5			Presentation, Discussion	Laboratory Manual
B. Qualitative and Quantitative unknown drug in biological sample (Blood AND/OR Urine) by triage and FPI.	5			Laboratory work	
A. Alcohols, Drugs and driving.	6			Presentation, Discussion	All references listed below.
B. Qualitative and Quantitative analysis of postmortem Urine sample contains Benzodiazepines by LLE and/or SPE with GC/NPD.	6			Laboratory work	
A. Drugs of Abuse in sport (Doping in sport).	7			Presentation, Discussion	Laboratory Manual
B. Qualitative and Quantitative analysis of postmortem Urine sample contains Benzodiazepines by LLE and/or SPE with GC/NPD.	7			Laboratory work	
A. Drugs of Abuse.	8			Presentation, Discussion	All references listed below.
B. Qualitative and Quantitative analysis of postmortem Urine sample contains Benzodiazepines by LLE and/or SPE with GC/NPD.	8			Laboratory work	
A. Workplace Drug Testing.	9			Presentation, Discussion	Laboratory Manual
B. Qualitative and Quantitative analysis of postmortem Urine sample contains Benzodiazepines by LLE and/or SPE with GC/NPD.	9			Laboratory work	All references listed below.
Mid Exam (theoretical and practical).	10				
A. Stability of drugs in forensic samples.	11			Presentation, Discussion	Laboratory Manual
B. Mid Exam (continue the practical exam).	11			Laboratory work	
A. Analysis of chemical warfare agents.	12			Presentation, Discussion	All references listed below.
B. Qualitative and Quantitative analysis of postmortem blood AND/OR urine sample contains TCA by LLE and/or SPE with HPLC/DAD.	12			Laboratory work	
A. Review: forensic toxicology data in Jordan.	13			Presentation, Discussion	Laboratory Manual
B. Qualitative and Quantitative analysis of postmortem blood AND/OR urine sample contains TCA by LLE and/or SPE with HPLC/DAD.	13			Laboratory work	All references listed below.
A. Volatile Substances.	14			Presentation, Discussion	

B. Identify unknown poison by GC/MS.	14			Laboratory work	Laboratory Manual
A. Pesticides.	15			Presentation, Discussion	All references listed below.
B. Final Exam (Practical exam).	15			Laboratory work	
A. Quality control and assessment	16			Presentation, Discussion	Laboratory Manual
B. Final Exam (Practical exam).	16			Laboratory work	
A. Pitfalls and cautions in analysis of drugs and poisons.	16			Presentation, Discussion	

21. Teaching Methods and Assignments:

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

Teaching Method	ILO/s
Seminars and Discussions:	Yes
Homework and Assignments:	Yes
Projects:	N.A
Presentation: Case	Yes
Other:	Laboratory work

- Seminars, Discussions, case presentation, Home work and Laboratory work.
Home work and Assignments

- Analysis Forensic toxicology samples for the presence of poisons.
- Writing technical report, case defense and presentation

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Evaluation	Point %	Date
Midterm Exam	Theoretical Exam: 20%. Practical Exam: 10%.	As given by The university of Jordan
Assignments	Practical Exam: 5%. Seminar: 10%. Writing technical report, discussion and case presentation: 10%.	During the semester.
Homework	Theoretical and Practical homework: 5%	During the semester.
Final Exam	Theoretical Exam: 25%. Practical Exam: 15%.	As given by The university of Jordan

23. Course Policies:

A- Attendance policies:

B- Absences from exams and handing in assignments on time:

C- Health and safety procedures:

D- Honesty policy regarding cheating, plagiarism, misbehavior:

E- Grading policy:

Intended Grading Scale

00-55	C
56-60	C+
61-65	B ⁻
66-70	B
71-75	B+
76-80	A ⁻
81-100	A

F- Available university services that support achievement in the course:

24. Required equipment:**25. References:**

A- Required book (s), assigned reading and audio-visuals:

Main Reference(s):

1. Clarke's Analysis of Drugs and Poisons, Moffatt -2004.
2. Clark's Analytical Forensic Toxicology, Jickells & Negrusz-2008.

References:

1. Drugs and Poisons in Human: A Handbook of Practical Anaysis2005.
2. Postmortem Toxicology of Abused drugs, Steven B. Karch-2007.
Internet.

26. Additional information:

•Concerns or complaints should be expressed in the first instance to lecturer; if no resolution is forthcoming, then the issue should be brought to the attention of the Department Chair and if still unresolved the Dean and then ultimately the Vice President. For final complaints, there will be a committee to review grading the final exam.

•For more details on University regulations please visit: <http://www.ju.edu.jo/rules/index.htm>

Name of Course Coordinator: -----Signature: ----- Date: -----

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

Head of Department: ----- Signature: -----

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

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

Copy to:

Head of Department
Assistant Dean for Quality Assurance
Course File