



**Faculty of Medicine
Quality Assurance Unit**

***Master (MSC) Degree Program and Courses Specifications for
Clinical Toxicology***

(According to currently applied **Credit point bylaws)**

***Forensic Medicine and Clinical
Toxicology department
Faculty of medicine
Assiut University
2022-2023***

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Master degree of Clinical Toxicology

A. Basic Information

- + **Program Title: Master degree of Clinical Toxicology**
- + **Nature of the program: Single.**
- + **Responsible Department: Department of Forensic Medicine & Clinical Toxicology - Faculty of Medicine- Assiut University .**
- + **Program Academic Director (Head of the Department):
Prof. Dr : Randa Hussein AbdelHady**
- Coordinator (s):**
 - **Principle coordinator ::Hayam Zakaria**
 - **Assistant coordinator (s) Prof. Dr:- Safaa M.George.**
- + **Internal evaluators::: Wafaa M.Abd El Moneim**
- + **External evaluator: Prof.Dr: Mohmed Abd EL Azaim
,Minia University.**
- + **Date of Approval by the Faculty of Medicine Council of Assiut University: 20/12/2015.**
- + **Date of most recent approval of program specification by the Faculty of Medicine Council of Assiut University: 27-11-2022**
- + **Total number of courses: 7 courses+1 elective course**
 - First part: 5 courses**
 - Second part:2 courses.**

B. Professional Information

1- Program aims

1/1 Provide learning experiences that promote a broad understanding of the role of medical toxicology as it relates to other medical disciplines.

1/2 Develop measurable objectives to assess the progression of the specialist in the two-year training program.

1/3 Integrate the sciences applicable to medical toxicology with clinical experiences in a progressive manner .

1/4 Provide the specialist in medical toxicology with essential patient care responsibilities, commencing with general medical skills and progressing to complete care of patients in need of toxicological care.

1 /5 Provide training that will enable the specialist in medical toxicology to rapidly evaluate, initiate treatment, and provide appropriate therapy and disposition of the patient.

1 /6 Provide the opportunity to develop the teaching skills of specialists in emergency medicine in regard to toxicological emergencies.

1 /7 Provide the opportunity to develop the skills necessary for problem solving in the practice of medical toxicology.

1/8 Provide the opportunity to develop professional leadership and management skills.

1/9 Provide the opportunity to conduct research in medical toxicology.

1 /10 Provide the opportunity to learn to practicing clinical toxicology in an ethical consideration.

2-Intended learning outcomes (ILOs)
for the whole program:

2/1 Knowledge and understanding:

A-Explain the essential facts and principles of relevant basic sciences including, therapeutics; pharmacokinetics, pharmacodynamics and their application to toxicology, adverse drug reaction and interactions, principle of drug abuse, drug dependence, drug withdrawal ,tolerance and a practical classification of poisoning related to **Clinical toxicology**.

B. Mention essential facts of clinically supportive sciences including Internal Medicine, Medico legal responsibility in poisoning and physician faults and General Toxicology including different toxidromes related to Clinical toxicology.

C-Demonstrate sufficient knowledge of etiology, clinical picture, diagnosis, prevention and treatment **the** common diseases and situations related to **Clinical toxicology**.

D-Give the recent and update developments in the pathogenesis, diagnosis, prevention and treatment of common diseases related to **Clinical toxicology**.

E-Mention the basic ethical and medicolegal principles **that should be applied in practice and are** relevant to the **Clinical toxicology**.

F-Mention the basics **and standards** of quality assurance to ensure good clinical **practice in the field of** **Clinical toxicology**.

G-Mention the ethical and scientific principles of medical research **methodology**.

H-State the impact of common health problems in the field of **Clinical toxicology** on the society and how good clinical practice improves these problems.

2/2 Intellectual outcomes

- A. Correlate the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common diseases of the **Clinical toxicology**.
- B. Demonstrate an investigatory and analytic thinking approach (problem solving) to common clinical situations related to **Clinical toxicology**.
- C. Design and /or present a case or review (through seminars/journal clubs.) in one or more of common clinical problems relevant to the **Clinical toxicology** field.
- D. Formulate management plans and alternative decisions in different situations in the field of the **Clinical toxicology**.

2/3 Skills

2/3/1 Practical skills (Patient Care)

- A. Obtain proper history and examine patients in caring and respectful behaviors.
- B. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment for common conditions related to **Clinical toxicology**.
- C. Carry out patient management plans for common conditions related to **Clinical toxicology**.

- D. Use information technology to support patient care decisions and patient education in common clinical situations related to **Clinical toxicology**.
- E. Perform competently non invasive and invasive procedures considered essential for the **Clinical toxicology**.
- F. Provide health care services aimed at preventing health problems related to **Clinical toxicology**.
- G. Provide patient-focused care in common conditions related to **Clinical toxicology**, while working with health care professionals, including those from other disciplines
- H. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets (Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records)

2/3/2 General skills

Including:

- Practice-based Learning and Improvement
- Interpersonal and Communication Skills
- Professionalism
- Systems-based Practice

Practice-Based Learning and Improvement

- A. Perform practice-based improvement activities using a systematic methodology (share in audits and risk management activities and use logbooks).
- B. Appraises evidence from scientific studies.
- C. Conduct epidemiological Studies and surveys.

D. Perform data management including data entry and analysis and using **information technology to manage information, access on-line medical information; and support their own education.**

E. Facilitate learning of students and other health care professionals **including their evaluation and assessment.**

Interpersonal and Communication Skills

F. Maintain therapeutic and ethically sound relationship with patients.

G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.

H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.

I. Work effectively with others as a member of a health care team or other professional group.

Professionalism

J. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society

K. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices

L. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities

Systems-Based Practice

M. Work effectively in relevant health care delivery settings and systems **including good administrative and time management.**

N. Practice cost-effective health care and resource allocation that does not compromise quality of care.

O. Assist patients in dealing with system complexities.

3- Program Academic Reference Standards (ARS) (Annex 2)

Academic standards for master degree in **Clinical toxicology**

Assiut Faculty of Medicine developed master degree programs' academic standards for different clinical specialties.

In preparing these standards, the General Academic Reference Standards for post graduate programs (GARS) were adopted. These standards set out the graduate attributes and academic characteristics that are expected to be achieved by the end of the program.

These standards were approved by the Faculty Council on 17-6-2009. These standards were revised and approved without changes by the Faculty Council on 23-9-2014. These standards were recently revised and reapproved without changes by the Faculty Council on 27-11-2022.

4- Program External References(Benchmarks)

1. ACGME (Accreditation Council for Graduate Medical education).
2. <https://www.findamasters.com/masters-degrees/?Keywords=clinical+toxicology>

5. Program Structure and Contents

A. Duration of program: 3 – 5 years

B. Structure of the program:

Didactic# 40 (22.2 %), practical 120 (66.7%), thesis 20 (11.1%), total 180

First part

Didactic 14 (35 %), practical 24 (60 %), elective course 2 CP (5%), total 40

Second part

Didactic 24 (20%), practical 96 (80 %), total 120

Didactic (lectures, seminars, tutorial).

According the currently applied bylaws:

Total courses 160 CP

Compulsory courses: 98.9%

Elective course: 2 credit point: 1.1%

	Credit points	% from total
Basic science courses	24	13.3%
Humanity and social courses	2	1.1%
Speciality courses	134	74.5%
Others (Computer, ...)		
Field training	120	66.7%
Thesis	20	11.1%

C. Program Time Table

A. Duration of program 3 years maximally 5 years divided into

○ **Part 1: (One year)**

Program-related basic science courses and ILOs + elective courses

Students are allowed to sit the exams of these courses after 12 months from applying to the M Sc degree.

One elective course can be set during either the 1st or 2nd parts.

○ **Thesis**

For the M Sc thesis;

MSc thesis subject should be officially registered within 6 months from application to the MSc degree,

Discussion and acceptance of the thesis could be set after 12 months from registering the MSc subject;

It should be discussed and accepted before passing the second part of examination)

○ **Part 2 (2 years)**

Program –related speciality courses and ILOs

Students are not allowed to sit the exams of these courses before 3 years from applying to the MSc degree.

The students pass if they get 50% from the written exams and 60% from oral and clinical/practical exams of each course and 60% of summation of the written exams, oral and clinical/practical exams of each course

Total degrees 1900 marks.

700 marks for first part

1200 for second part

Written exam 40% - 70%.

Clinical/practical and oral exams 30% - 60%.

D. Curriculum Structure: (Courses):

✚courses of the program:

courses	Course Code	Core Credit points		
		Lectures	training	total
First Part				
Basic science courses Courses (8CP)				
Course 1: Forensic Chemistry and Toxicological Analysis.	CLT210A	3	2	5
Course 2: Clinical Pharmacology.	CLT206	2	1	3
General clinical compulsory courses (6 points)				
Course 3 :Internal Medicine	CLT 218	2		
	CLT 210B	2		
	CLT 210C	2		
Course 4 : Medico legal Responsibility in poisoning and Phycians Faults.				
Course 5 : General Toxicology				

Elective courses*	2CP			
- Elective course		2		2
Clinical training and scientific activities: Course 3 :Internal Medicine Course 4 : Medicolegal Responsibility in poisoning and Physicians Faults. Course 5 : General Toxicology	CLT 218 CLT 210B CLT210C		4 3 3	
Clinical training and scientific activities:(10 CP)			10	
Clinical training and scientific activities in speciality course (14 CP) Course 6: Clinical toxicology	CLT210D		14	
Total of the first part		16	24	40
Second Part	Speciality courses 24 CP Speciality Clinical Work (log Book) 96 CP			
Speciality Courses Course 6: Clinical toxicology Unit 1: Dependence and Illicit substances Unit 2: Special Toxicology Course7 : Intensive care for poisoning cases	CLT210D CLT229	24 18 6		
Training and practical activities in speciality (96 CP) (96 CP) Course 6: Clinical toxicology Unit 1: Dependence and	<u>CLT210D</u>		<u>96</u> 72	

Illicit substances Unit 2: Special Toxicology Course7 : Intensive care for poisoning cases	CLT229		24	
Total of the second part		24	96	120
Thesis				20
Total of the degree				180

Didactic (lectures, seminars, tutorial)

* Elective courses can be taken during either the 1st or 2nd parts.

Student work load calculation:

Work load hours are scheduled depending on the type of activities and targeted competences and skills in different courses

Elective Courses#:

- Medical statistics.
- Evidence based medicine.
- Medicolegal Aspects and Ethics in Medical Practice and Scientific Research
- Quality assurance of medical education
- Quality assurance of clinical practice.
- Hospital management

One of the above mentioned courses are prerequisites for fulfillment of the degree.

Thesis:

20 CP are appointed to the completion and acceptance of the thesis.

6. Courses Contents (Annex 1)

The competency based objectives for each course/module/rotation are specified in conjunction with teaching/training methods, requirements for achieving these objectives and assessment methods.

See Annex 1 for detailed specifications for each course/module

7-Admission requirements

✚ Admission Requirements (prerequisites) if any :

I. General Requirements:

- a. MBChB Degree from any Egyptian Faculties of Medicine
- b. Equivalent Degree from medical schools abroad approved by the Ministry of Higher Education
- c. One year appointment within responsible department (for non Assiut University based registrars)

II. Specific Requirements:

- a. Fluent in English (study language)

VACATIONS AND STUDY LEAVE

The current departmental policy is to give working residents 1-2 week leave prior to first/ second part exams.

FEES:

As regulated by the postgraduate studies rules and approved by the faculty vice dean of post graduate studies and the faculty and university councils.

8-Progression and completion requirements

- ✚ Examinations of the first part could be set at 12 months from registering to the MSc degree.
- ✚ Examination of the second part cannot be set before 3 years from registering to the degree.
- ✚ Discussion of the MSc thesis could be set after 1 year from officially registering the MSc subject before setting the second part exams.

✚ The minimum duration of the program is 3 years.

The students are offered the degree when:

1. Passing the exams of all basic science, elective and speciality courses of this program as regulated by the post graduates approved rules by the faculty council.
2. Completing all scheduled CP and log book (minimum 80%).
3. Discussion and acceptance of the MSc thesis.

9- Program assessment methods and rules (Annex IV)

Method	ILOs measured
Written examinations: Structured essay questions Objective questions: MCQ Problem solving	K & I
Clinical: Long/short cases OSCE	K ,I, P &G skills
Structured oral	K ,I &G skills
Logbook assessment	All
Research assignment	I &G skills

Weighting of assessments:

Courses	Course code	Degrees			Total
		Written Exam	Degree		
			Oral Exam *	Practical / Clinical Exam	
First part					
Basic science Courses:					
Course 1: Forensic Chemistry and Toxicological Analysis.	CLT210A	150	50	50	250
Course 2: Clinical Pharmacology	CLT206	100	25	25	150
General clinical courses					
Course 3: Internal Medicine	CLT218	60	20	20	100
Course 4 : Medicolegal responsibility in poisoning and Physicians faults	CLT210B	60	20	20	100
Course 5 : General Toxicology	CLT210C	50	50	-	100
Total of the		420	165	115	700

first part					
Second Part					
Speciality Courses:					
Course 6 : Clinical toxicology ; Unit1: Dependence and Illicit substances Unit 2: Special Toxicology	CLT210D	<u>450</u> 150 150+150	225 75 75+75	225 75 75+75	<u>900</u> 300 600
Course7: Intensive care for poisoning cases	CLT229	150	75	75	300
Total of the degree		600	300	300	1200
Elective course1		50	50	100	50

* 25% of the oral exam for assessment of logbook

Total degree 1900

700 marks for first part

1200 for second part

Written exam 50% (600 marks).

Clinical/practical and oral exams 50% (600 marks)

✚ Examination system:

➤ First part:

- Written exam 3 hours in Forensic Chemistry and Toxicological Analysis + Practical exam+ (Oral Exam) Attendance/ Assignments.
- Written exam 3 hours in Clinical Pharmacology + Practical exam+ (Oral Exam) Attendance/ Assignments.
- Written exam 2 hours in Internal medicine + (Oral exam) Attendance/ Assignments + Clinical exam.

- Written exam 2 hours in Medicolegal responsibility in poisoning and Physicians faults + practical exam+(Oral exam) Attendance/ Assignments.
- Written exam 2 hours in General Toxicology + (Oral exam) Attendance/ Assignments.

➤ **Second part:**

- Written exam 3 hours in Dependence and Illicit substances + (Oral exam) Attendance/Assignments (150+75+75 marks).
- Written exam 3 hours in Special Toxicology + (Oral exam) Attendance/ Assignments (150+75+75 marks).
- Written exam 3 hours in Special Toxicology + (Oral exam) Attendance/ Assignments (150+75+75 marks).
- Written exam 3 hours in Intensive care for poisoning cases + (Oral exam) Attendance/ Assignments (150+75+75 marks).

➤ **Elective courses**

- Written exam one paper 1 hour in Elective course + Oral & Practical exam

10-Program evaluation

By whom	method	sample
Quality Assurance Unit	Reports Field visits	#
External Evaluator (s):According to department council External Examiner (s): According to department council	Reports Field visits	#
Stakeholders	Reports Field visits Questionnaires	#
Senior students	Questionnaires	#
Alumni	Questionnaires	#

#Annex 5 contains evaluation templates and reports (Joined in the departmental folder).

11-Declaration

We certify that all of the information required to deliver this program is contained in the above specification and will be implemented.

All course specifications for this program are in place.

Contributor	Name	Signature	Date
Program Principle coordinator:	Prof. Dr Hayam.Zakaeia Thabet		
▪ Head of the Responsible Department (Program Academic Director):	Prof. Dr : Randa Hussein AbdelHady		

Annex 1, Specifications for Courses / Modules

Annex 1: specifications for courses/

Course 1: Forensic chemistry and Toxicological analysis

- **Name of department:** *Forensic Medicine and Clinical Toxicology.*
- **Faculty of medicine**
- **Assiut University**
- **2022-2023.**

1. Course data

- ✚ **Course Title:** Forensic chemistry and Toxicological analysis
- ✚ **Course code:** CLT210A.
- ✚ **Speciality:** Clinical Toxicology
- ✚ **Number of **points(CP):**** Didactic 3 CP (60%) practical2 CP(40%).total 5CP(100%).
- ✚ **Department (s) delivering the course:** Department of Forensic Medicine & Clinical Toxicology , Faculty of Medicine, Assiut University.
Coordinator (s): Prof.Dr. Hayam Z.Thabet
- ✚
 - . **Assistant coordinator (s): Prof. Dr.Safaa M .Goerge**

The Date last reviewed: 4-2022.

- ✚ General requirements (prerequisites) if any: none.**
- ✚ Requirements from the students to achieve course ILOs are clarified in the joining log book.**

2. Course Aims

- 2/1-To acquire the necessary background and facts as well as laboratory skills for:
- Principles of toxicological detection of different types of poisonous substances and drugs.
 - Principles of counterfeit and forgery. These are necessary for clinical toxicology in clinical reasoning, diagnosis and management of toxicological cases

3. Course intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
A. Describe the following principles related to clinical toxicology: -Toxicological sampling -Medico-legal implications in treatment of drug of abuse and analytical toxicology - Principles and theories of different analytical procedures. - Extraction procedures: Principle, methods, <i>Practical procedures.</i> - Color tests. - Spectrophotometry in analytical toxicology,	-Lectures - tutorials -assignments - seminars - discussions	Written examination+ attendance+ assignments

<p><i>Practical</i></p> <ul style="list-style-type: none"> - Thin layer chromatography: Techniques and procedures for different drug and poison groups, <i>Practical</i> - Gas chromatography: Description of theory and Technique, Uses and different methods, Practical - High Performance liquid Chromatography - Description of theory and Technique, Uses and different methods, Practical - Immunoassays as ELISA: Theory advantages and limitations, <i>Practical</i> - Other analytical methods : Description of technique, Atomic absorption, coupled plasma , distillation procedures 		
<p>B. Mention the following factual basics and principles of essential investigatory and analytic thinking approach to the following situations :</p> <ul style="list-style-type: none"> - Introduction - Corrosives Detection - Irritant detection - Volatile toxins detection - Gaseous toxins detection - Alkaloids detection - Insecticide detection - Detection of drugs of abuse - Antibiotics detection - Gun powder and explosions - (TLC , GC & HPLC) - Reagents in forensic chemistry - Scheme for detection of drug overdose - Blood stain analysis. - Semen stains analysis. 		
<p>C- Mention the basic ethical and medicolegal principles relevant to the Counterfeit and forger.</p>		
<p>D-Mention the basics of quality assurance to ensure good professional skills in his field.</p>		

E-Mention the ethical and scientific principles of medical research.		
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B- Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of relevant basic and clinically supportive sciences with conditions and diseases of relevance to clinical toxicology	Case-studies, discussing a problem	Written examination+ attendance+ assignments
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to conditions relevance to clinical toxicology		
C. Design and present audits, cases, seminars in common problems related to clinical toxicology.		

C- Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A-Perform the following basic lab skills and history taking that are essential to the conditions mentioned in AA,including; -Detection of different types of poisonous substances and drugs for human body (including corrosives, heavy metals, volatile, gaseous, plant alkaloids, pesticides, animals, food, antidepressants and antihistaminic poisoning) as regards: classification, mechanism of action, clinical features of toxicity, circumstances, diagnosis and treatment.	Problem solving	Written examination+ attendance+ assignments

B. Use instruments and devices in evaluation of counterfeit and forgery.		
C-Write and evaluate of the following reports: counterfeit and forgery.		
D. Perform the following basic experiments in related basic sciences to be utilized in the research work.		
E. Use information technology to support decisions in common situations related to counterfeit and forgery.		

D. General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology(audit, logbook)	-Observation and supervision -Written & oral communication	Written examination+ attendance+ assignments
B. Appraises evidence from scientific studies.		
C. Participate in one audit or survey related to the course		
D. Perform data management including data entry and analysis.		
E. Facilitate learning of junior students and other health care professionals.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain ethically sound relationship with others.	-Observation and supervision -Written & oral communication	Simulation Record review (report
G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		

I. Work effectively with others as a member of a health care team or other professional group.		
J. Present a case in detection of different types of poisonous substances		
K. Write a report in to counterfeit and forgery		

Professionalism

<i>ILOs</i>	<i>Methods of teaching/ learning</i>	<i>Methods of Evaluation</i>
L. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	Observation -Senior staff experience	1.Objective structured practical examination 2.Student survey
M. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		
N. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
O. Work effectively in relevant health care delivery settings and systems.	Observation -Senior staff experience	1-student survey 2. portfolios
P. Practice cost-effective health care and resource allocation that does not compromise quality of care.		

Q. Assist patients in dealing with system complexities.		
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**4. Course contents (topic s/modules/rotation
Course Matrix**

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
Toxicological sampling	A,B,E	A-C	A,B,E	A-Q
Medico-legal implications in treatment of drug of abuse and analytical toxicology	A-D	A-C	A-D	A-Q
Principles and theories of different analytical procedures	A-E	A-C	A-E	A-Q
Extraction procedures: Principle, methods, Practical	A,B,E	A-C	A,B,E	A-Q
Color tests	A-D	A-C	A-D	A-Q
Spectrophotometry in analytical toxicology, Practical	A-E	A-C	A-E	A-Q
Thin layer chromatography: Techniques and procedures for different drug and poison groups, Practical	A,B,E	A-C	A,B,E	A-Q
Gas chromatography: Description of theory and Technique, Uses and different	A-D	A-C	A-D	A-Q

methods, Practical				
High Performance liquid Chromatography: Description of theory and Technique, Uses and different methods, Practical	A-E	A-C	A-E	A-Q
Immunoassays: Theory, advantages and limitations, Practical	A,B,E	A-C	A,B,E	A-Q
Other analytical methods : Description of technique, Atomic absorption, Conway cell, distillation procedures,	A-D	A-C	A-D	A-Q

5. Course Methods of teaching/learning:

- 1-Lectures on specific topics.
- 2-Practical classes.
- 3-Demonstrations.
- 4-Multi-head slide microscopic seminars.
- 5-Scientific meetings.

6. Course Methods of teaching/learning: for students with poor achievements

1. Extra Didactic (lectures, seminars, tutorial) according to their needs
2. Extra training according to their needs

7. Course assessment methods:

Student Assessment Methods

- 1 - Essay written
- 2 - Practical exam
- 3 - Clinical exam and check list application
- 4 - MCQ exam
- 5 - Research article presentation

Written examination	150 marks
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Practical & Clinical examination	50 marks
Oral examination	50 marks
Total	250 marks

8. List of references

i. Lectures notes.

ii. Essential books

Adam Negrusz and Gail Cooper (2013): Clarke's Analytical Forensic Toxicology. 2nd ed. London: Pharmaceutical Press.

9. Signatures

Course Coordinator: Prof.Dr. Hayam Zakaria Thabet	Head of the Department: Prof.Dr. Randa Hussein AbdelHady
Date:	Date:

Course 2: Clinical Pharmacology

1. Course data

- + **Course Title: Clinical Pharmacology**
- + **Course code: CLT206**

- + **Specialty: Clinical Toxicology.**
- + **Number of **points(CP)**: Didactics: 2CP(66.7%); 1CP(33.3%), total 3 CP(100%).**
- + **Department (s) delivering the course:** Department of Forensic Medicine and clinical Toxicology& Department of medical pharmacology.
- + **Coordinator (s):**
 - **Course coordinator: Prof.Dr. Hayam Zakaria Thabet**
 - **Assistant coordinator (s) Prof.Dr. Aml Ali**

- + **Date last reviewed:4-2022**
- + **General requirements (prerequisites) if any: None.**
- + **Requirements from the students to achieve course ILOs are clarified in the joining log book.**

2. Course Aims

2/1- is to assure that the students obtain the essential facts and knowledge of the basic and clinical pharmacological principles as well as practical skills in clinical reasoning and management of common conditions and situation related to clinical toxicology.

3. Course intended learning outcomes (ILOs):

A- Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
<p>A. Describe in details the following clinical pharmacology principles related to clinical toxicology:</p> <ul style="list-style-type: none"> - The basic pharmacokinetics of drugs, the bioavailability and biotransformation of drugs - The pharmacodynamic concepts of drug-receptor interaction to accurately predict drug responses at all levels of biological organization. 	<p>Lectures – tutorials -assignments – seminars - discussions</p>	<p>Written examination+ attendance+ assignments</p>
<p>B. Mention the principles of the basic</p>		

mechanisms of drug interactions in conditions related to clinical toxicology.		
C. State update and evidence based Knowledge of therapeutic indications and side effects of drugs.		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to clinical Toxicology		
E. Mention the basic ethical and medicolegal principles relevant to the clinical toxicology.		
F. Mention the basics of quality assurance to ensure good clinical care in his field		
G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in the field of specialty on the society.		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of relevant basic and clinically supportive sciences of clinical pharmacology with clinical reasoning, diagnosis and management of common emergency related to clinical Toxicology.	Case-studies, discussing a problem	written examination+ attendance+ assignments

<p>B. Demonstrate an investigatory and analytic thinking (problem solving) approaches in clinical pharmacology to common clinical situations related to clinical Toxicology like:</p> <ul style="list-style-type: none"> - Interpretation of pharmacological data such as drug levels in the context of optimizing drug therapy. - Application of pharmacological principles in the therapeutic management of poisoned patients. - Prediction of the biotransformation and efficacy of metabolites and the significance of their analysis. - Calculation of the area under the curve to estimate the drug concentrations 		
<p>C. Design and present cases and seminars in common problem.</p>		
<p>D-Formulate management plans and alternative decisions in different situations in the field of the clinical Toxicology.</p>		

C-Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
<p>A. Obtain proper history and examine patients in caring and respectful behaviors.</p>	<p>Case-studies, discussing a problem</p>	<p>Written examination+ attendance+ assignments+ practical exam</p>
<p>B. Interpretate the drug levels on the basis of absorption, metabolism, elimination, kinetics, and adverse drug reactions, as well as receptor pharmacology.</p>		
<p>C. Carry out patient management plans for common conditions related to clinical toxicology.</p>		
<p>D. Use information technology to support patient care decisions and patient education in common clinical situations related to clinical toxicology.</p>		
<p>E. Provide health care services aimed at preventing health problems related to clinical toxicology.</p>		

<p>F-Provide patient-focused care in common conditions related to clinical toxicology, while working with health care professionals, including those from other disciplines.</p>		
<p>G-Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records)</p>		

D-General Skills
Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology(audit, logbook)	Case-studies, discussing a problem	Written examination+ attendance+ assignments
B. Appraises evidence from scientific studies(journal club)		
C. Conduct epidemiological Studies and surveys.		
D. Perform data management including data entry and analysis.		
E. Facilitate learning of junior students and other health care professionals.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients.	Case-studies, discussing a problem	Written examination+ attendance+ assignments
G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		
I. Work effectively with others as a member of a health care team or other professional group.		
J. Present a case in Toxicology		
K. Write a report in Pharmacogenetics.		
L. Council patients and families about emergency in Toxicology		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	Case-studies, discussing a problem	Written examination+ attendance+ assignments
N. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		
O. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
P. Work effectively in relevant health care delivery settings and systems.	Case-studies, discussing a problem	Written examination+ attendance+ assignments
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		
R. Assist patients in dealing with system complexities.		

4. Course contents (topics)

Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skills	General Skills
The basic pharmacokinetics of drugs, the bioavailability and biotransformation of drugs	A-H	A-D	A-G	A-R
The pharmacodynamic concepts of drug-receptor interaction	A-H	A-D	A-G	A-R
Pharmacogenetics	A-H	A-D	A-G	A-R
Mechanism of action of drugs. -Routes of drug administration and Factors modifying drug action. -Pharmacological bases of drug interactions	A-H	A-D	A-G	A-R
-Receptor pharmacology -Adverse drug reactions	A-H	A-D	A-G	A-R

5. Course Methods of teaching/learning:

- 1-Lectures on specific topics.
2. Practical classes.
3. Demonstrations.
4. Scientific meetings

6. Course Methods of teaching/learning: for students with poor achievements

- 1-Extra didactic (lectures, seminars, tutorial).
2. Extra Computer laboratory .

7. Course assessment methods:

Student Assessment Methods

- 1 - Essay written
- 2 - Practical exam
- 3 - Clinical exam and check list application
- 4 - MCQ exam
- 4 - Research article presentation

Written examination	100 marks
Practical & Clinical examination	25 marks
Oral examination	25 marks
Total	150 marks

8. List of references

- Lectures notes
- *Course Notes (paper and / or electronic)*
- *Essential Books (Text Books)*
- Basic and Clinical Pharmacology, 11th Edition (LANGE Basic Science),2011.

Recommended Books
Periodicals, Web Sites,

9. Signatures

Course Coordinator: Prof .Dr : Hayam Zakria	Head of the Department: Prof .Dr: Randa Hussein AbdelHady
Date:	Date:

Course3: Internal Medicine

1. Course data

- + **Course Title:** Internal Medicine

- + **Course code:** CLT218
- + **Specialty:** Clinical Toxicology
- + **Number of **points(CP)**:** Didactics:2 CP(33.3%),
Training :4CP(66.7%), Total 6CP(100%).
- + **Department (s) delivering the course:** Department of Internal medicine in conjunction with Department of Forensic medicine and clinical toxicology.
- + **Coordinator (s):**
 - **Course coordinator:** Prof.Dr. Nahed A. Gawesh
 - **Assistant coordinator (s)** Prof.Dr. Heba Atia Yassa
- + **Date last reviewed:** 4-2022
- + **General requirements (prerequisites) if any:** none.
- + **Requirements from the students to achieve course ILOs are clarified in the joining log book.**

2. Course Aims

2/1- To acquire an appropriate background of diseases in internal medicine related to speciality that may simulate toxicological presentations.

2/2- To identify and manage medical complications in the context of poisoning

2/3-To achieve competent practice in general medical examination and develop diagnostic and investigatory skills in differentiating diseases by proper integration of assembled clinical data.

2/4- To develop the skills to predict and manage possible signs of ominous system failure and diseases of organs targeted by poisons.

2/5- To acquire the talent and experience of rapid management of medical emergencies.

3. Course intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
<p>A. Describe the etiology, clinical picture, diagnosis and management of the following situations and clinical conditions related to clinical toxicology:</p> <ul style="list-style-type: none"> - Metabolic disturbance, - Organ failure , - Structural and toxicological presentations such as; <ul style="list-style-type: none"> • Coma, • Convulsions, • Shock, 	<ul style="list-style-type: none"> -Lectures - Tutorials -Assignments - Seminars - Discussions -Problem solving 	<p>Written examination+ attendance+ assignments -logbook.</p>

<ul style="list-style-type: none"> • Respiratory failure. - Differential diagnosis of clinical presentation (systemic signs and presentations) that simulate poisoning. - Medical complications and evolution of general systemic diseases including follow up guidelines designed in protocols of treatment. 		
<p>B. Mention the principles of diagnostic, therapeutic tools used for differentiating between medical and toxicological illnesses and presentations that mentioned in AA including general, systemic and neuropsychiatric examination.</p>	<p>Lectures – tutorials- assignments – seminars - discussions</p>	<p>Written examination+ attendance+ assignments</p>
<p>C. State update and evidence based medical Knowledge of the following guidelines and procedures ;</p> <ul style="list-style-type: none"> - The therapeutic guidelines and protocols of management of medical diseases that may concomitantly present in poisoning patient. - The emergency medical procedures and medications, their limitations, complications and efficacy in different clinical situations. - Therapeutic indications and side effects of drugs. 		
<p>D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to clinical toxicology.</p>		
<p>E. Mention the basic ethical and medicolegal principles relevant to the sciences related to clinical toxicology.</p>		
<p>F. Mention the basics of quality assurance to ensure good clinical care in his field</p>		
<p>G. Mention the ethical and scientific principles of medical research</p>		
<p>H. State the impact of common health problems in the field of clinical toxicology on the</p>		

society.		
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B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common diseases related to clinical toxicology .	Case-studies, discussing a problem	Written examination+ attendance+ assignments
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to clinical toxicology .		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of the clinical toxicology .		

C-Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine patients in caring and respectful behaviors.	Case-studies, discussing a problem	Written examination+ attendance+ assignments clinical exam logbook assessment
B. Order the noninvasive diagnostic procedures for conditions related to clinical toxicology mentioned in AA		
C-Interpret the findings of noninvasive and invasive diagnostic procedures that used in conditions mentioned in AA like; Plain radiography, ultrasound, Computed Tomography (CT), Magnetic Resonance Imaging (MRI), etc.		
D. Perform the following noninvasive procedures	Case-studies,	Written

<p>like blood gases, blood sampling, etc....., that used in management of conditions mentioned in AA.</p>	<p>discussing a problem</p>	<p>examination+ attendance+ assignments</p>
<p>E. Prescribe the following noninvasive therapeutic procedures in management and follow up guidelines of conditions related to clinical toxicology mentioned above.</p>		<p>clinical exam logbook assessment</p>
<p>F. Carry out patient management plans for common medical conditions related to clinical toxicology.</p>		
<p>G. Use information technology to support patient care decisions and patient education in common clinical situations related to clinical toxicology</p>		
<p>H. Provide health care services aimed at preventing and differentiating health problems related to clinical toxicology like: patients with renal, hepatic failure as toxic versus viral fulminant hepatitis, pre-renal versus organic renal failure.</p>		
<p>I-Provide patient-focused care in common conditions related to clinical toxicology while working with health care professionals, including those from other disciplines like: -cases presenting with coma, convulsions and agitation or altered behavior. - Patients with renal, hepatic failure as toxic versus viral fulminant hepatitis, prerenal versus organic renal failure. -care of patients with shock and or respiratory failure.</p>		
<p>J-Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records).</p>		

D-General Skills
Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology(audit, logbook)	Case-studies, discussing a problem	Written examination+ attendance+ assignments
B. Appraises evidence from scientific studies(journal club)	- Case log - Observation and supervision - Written & oral communication - Journal clubs - Discussions in seminars and clinical rounds	-Log book & portfolio
C. Conduct epidemiological Studies and surveys.		
D. Perform data management including data entry and analysis.		
E. Facilitate learning of junior students and other health care professionals.	-Clinical rounds -Senior staff experience	

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients.	-Observation & supervision -Didactic	Simulation Record review (report)
G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		
I. Work effectively his role as clinical toxicologist with others as a member of a health care team or other professional group.		
J. Present a case in clinical toxicology		
K. Write a report in case related to clinical toxicology.		
L. Council patients and families about clinical toxicology		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.	-Observation & supervision -Didactic	-Objective structured clinical examination -Patient survey
N. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		- 360o global rating
O. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		Objective structured clinical

		examination -360o global rating
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Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
P. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	-360o global rating
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		-Check list evaluation of live or recorded performance
R. Assist patients in dealing with system complexities.		-360o global rating - Patient survey

4. Course contents (topic s/modules/rotation Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skills	General Skills
- General, systemic and neuropsychiatric examination.	A-H	A-D	A-J	A-R
-Metabolic disturbance,	A-H	A-D	A-J	A-R
- Organ failure ,	A-H	A-D	A-J	A-R
Structural and toxicological presentations such as; <ul style="list-style-type: none"> • Coma, • Convulsions, • Shock, • Respiratory failure. 	A-H	A-D	A-J	A-R
Differential diagnosis of clinical presentation (systemic signs and presentations) that simulate poisoning.	A-H	A-D	A-J	A-R
- Medical complications and evolution of general systemic diseases including follow up guidelines designed in protocols of treatment.	A-H	A-D	A-J	A-R
-The therapeutic guidelines and protocols of management	A-H	A-D	A-J	A-R

of medical diseases that may concomitantly present in poisoning patient.				
- The emergency medical procedures and medications, their limitations, complications and efficacy in different clinical situations	A-H	A-D	A-J	A-R
- Therapeutic indications and side effects of drugs.	A-H	A-D	A-J	A-R

5. Course Methods of teaching/learning:

1. Lectures on specific topics.
2. Practical classes.
3. Demonstrations.
4. Scientific meetings.

6. Course Methods of teaching/learning: for students with poor achievements

- 1-Extra didactic (lectures, seminars, tutorial).
2. Extra Computer laboratory

7. Course assessment methods:

Student Assessment Methods

- 1- Short essays to assess knowledge
 - 2 -MCQs to assess knowledge and intellectual skill
 - 3 -Practical/ Clinical exam to assess professional skills and general skills
- Oral exam to assess intellectual, professional and general skills.

Weighing of assessments

Written examination	60 marks
Practical & Clinical examination	20 marks
Oral examination	20 marks
Total	100 marks

i. Assessment tools: written exam the form of Short essays to assess knowledge and MCQs to assess knowledge and intellectual skills

i. Marks: 100

8. List of references

List of References

- 1- Harrison's textbook of Internal Medicine, 12th edition, 2018.
- 2- Oxford Handbook of Clinical Medicine Hope et al, 8th edition, 2009.
Cecil Textbook of Medicine, *25th edition, 2015.*

9. Signatures

Principle Course Coordinator: Prof.Dr. Hayam Zkaria	Head of the Department: Prof .Dr Randa Hussein AbdelHady
Assistant coordinator: -Prof.Dr.Safaa M.goerge	
Date:	Date:

Course 4: Medicolegal responsibility in poisoning and Physicians faults

1. Course data

- + Course Title: Medicolegal responsibility in poisoning and Physicians faults**
- + Course code: CLT210B**
- + Specialty :Clinical Toxicology.**
- + Number of **points (CP)**: Didactics:2 CP(40%); training: 3CP (60%) , Total: 5CP(100%).**
- + Department (s) delivering the course:** Department of Forensic Medicine and clinical Toxicology, Faculty of medicine, Assuit University.
- + Coordinator (s):**
Course coordinator: Prof.Dr. Hyam Zakaria
- Assistant coordinator (s): Prof.Dr. Saly Yehia
- + Date last reviewed:4-2022**
- + General requirements (prerequisites) if any: none**
- + Requirements from the students to achieve course ILOs are clarified in the joining log book.**

2. Course Aims

2/1- To obtain a comprehensive basic ethical principles in toxicology practice and in emergency medicine.

2/2- To identify and manage medical complications in the context of poisoning malpractice.

3. Course intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	Methods of teaching/ Learning	<i>Methods of Evaluation</i>
<p>A. Illustrate in depth the principles of the following circumstances related to the course in practice of clinical toxicology:</p> <ul style="list-style-type: none"> - Malpractice points in reference to therapeutic guidelines and, management protocols for acute intoxicated patients in emergency room, in-patient unit, ICU, out-patient unit and laboratory. - The writing principles of medico-legal report in acute intoxicated patients. - The medico-legal responsibilities towards answering a patient telephone asking a medical advice. 	<p>Lectures – tutorials- assignments – seminars - discussions</p>	<p>Written examination+ attendance+ assignments</p>
<p>B -Recognize different forms of medico-legal aspects of the following conditions;</p> <ul style="list-style-type: none"> - Negligence in acutely intoxicated patient. 		

<ul style="list-style-type: none"> - The medico-legal aspects of transfer and referral -The negligence in providing efforts of diagnosis and management in toxicology practice -Requirements for Negligence to be Actionable 		
<p>C. State update and evidence based Knowledge of Therapeutic indications and side effects of drugs</p>	<p>Lectures – tutorials- assignments – seminars - discussions</p>	<p>Written examination+ attendance+ assignments</p>
<p>D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to the course in clinical Toxicology</p>		
<p>E. Mention the basic ethical and medicolegal principles relevant to the Toxicology.</p>		
<p>F. Mention the basics of quality assurance to ensure good clinical care in his field</p>		
<p>G. Mention the ethical and scientific principles of medical research</p>		
<p>H. State the impact of common health problems in the field of specialty on the society.</p>		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
<p>A. Correlates the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common emergency related to conditions mentioned in AA &AB in clinical Toxicology.</p>	<p>Case-studies, discussing a problem</p>	<p>Written examination+ attendance+ assignments</p>
<p>B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to conditions mentioned in AA &AB in clinical Toxicology.</p>		

C. Design and /or present a case or review (through seminars/journal clubs.) in one or more of common clinical problems relevant to the field of conditions mentioned in AA &AB in clinical Toxicology.		
D-Formulate management plans and decision making in different situations in the field of conditions mentioned in AA &AB in clinical Toxicology.		

C-Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine patients in caring and respectful behaviors.	Didactic (lectures, seminars, tutorial) -Inpatient -Case presentation -Direct observation	Written examination+ attendance+ assignments+ practical exam+ logbook assessment
B. Interpret the different noninvasive and invasive diagnostic procedures related to conditions mentioned in AA &AB in clinical Toxicology.		
C. Carry out patient management plans and decision-making for different conditions mentioned in AA &AB in clinical Toxicology.		
D. Use information technology to support patient care decisions and patient education in common clinical situations related to different conditions mentioned in AA &AB in clinical Toxicology.		
E. Provide health care services aimed at preventing health problems related to different conditions mentioned in AA &AB in clinical Toxicology.		
F-Provide patient-focused care in common conditions related to different conditions mentioned in AA &AB in clinical Toxicology, while working as a clinical toxicologist with health care professionals, including those from other disciplines.		
G-Write competently all forms of patient charts and sheets in different conditions mentioned in AA		

<p>&AB including reports evaluating these charts and sheets.(Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records)</p>		
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D-General Skills
Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology(audit, logbook)	<ul style="list-style-type: none"> -Case presentation -Observation and supervision -Written & oral communication 	--Log book & portfolio
B. Appraises evidence from scientific studies(journal club)	<ul style="list-style-type: none"> -Clinical round with senior staff -Observation -Post graduate teaching 	<ul style="list-style-type: none"> - presentation - Log book - Check list
C. Conduct epidemiological Studies and surveys.		
D. Perform data management including data entry and analysis.	Clinical round with senior staff	
E. Facilitate learning of junior students and other health care professionals.	<ul style="list-style-type: none"> -Perform under supervision of senior staff experience 	

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients regarding to responsibility towards the patient related to the toxicologist by a duty.	-Observation & supervision -Didactic	Simulation Record review (report)
G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		
I. Work effectively with others as a member of a health care team or other professional group with respect for other opinions.		
J. Present a case in Toxicology		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
K. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.	-Observation & supervision -Didactic	-Objective structured clinical examination -Patient survey
L. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices with honesty and integrity in all interactions with patients		- 360o global rating
M. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		-Objective structured

		clinical examination -360o global rating
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Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
N. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	-360o global rating
O. Practice cost-effective health care and resource allocation that does not compromise quality of care.		-Check list evaluation of live or recorded performance
P. Assist patients in dealing with system complexities.		-360o global rating - Patient survey

**4. Course contents (topic s/modules/rotation
Course Matrix**

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skill	General Skills
Malpractice points in reference to therapeutic guidelines and ,management protocols for acute intoxicated patients in emergency room, in-patient unit, ICU, out-patient unit and laboratory.	A-H	A-D	A-G	A-P
- The writing principles of medico-legal report in acute intoxicated patients	A-H	A-D	A-G	A-P
The medico-legal responsibilities towards answering a patient telephone asking a medical advice	A-H	A-D	A-G	A-P
- Negligence in acutely intoxicated patient	A-D	A-D	A-G	A-P
The medico-legal aspects of transfer and referral	A-D	A-D	A-G	A-P
The negligence in providing efforts of diagnosis and	A-D	A-D	A-G	A-P

management in toxicology practice				
Requirements for Negligence to be Actionable.	A-D	A-D	A-G	A-P

5. Course Methods of teaching/learning:

- 1-Lectures on specific topics.
2. Practical classes.
3. Demonstrations.
4. Scientific meetings

6. Course Methods of teaching/learning: for students with poor achievements

- 1-Extra didactic (lectures, seminars, tutorial).
2. Extra Computer laboratory

7. Course assessment methods:

Student Assessment Methods

- .1 Short essays to assess knowledge
- .2 MCQs to assess knowledge and intellectual skills
- .3 Practical/ Clinical exam to assess professional skills and general skills
4. Oral exam to assess intellectual, professional and general skills.

Weighing of assessments

Written examination	60 marks
Practical& Clinical examination	20 marks
Oral examination	20 marks
Total	100 marks

7. List of references

- List of References

1- Course Notes (paper and / or electronic)

2- Essential Books (Text Books)

- Legal Issues In Medical Practice: Medicolegal Guidelines For Safe Practice,2018
- Medical Negligence: What Doctors, Patients & Hospitals Should Know

8. Signatures

Principle Course Coordinator: Prof Dr:Hayam Zakaria Assistant coordinator:- Prof.Dr. Saly Yehia	Head of the Department: Prof .Dr Randa Hussein AbdelHady
<i>Date:</i>	<i>Date:</i>

Course 5: General toxicology

1. Course data

Course Title: General toxicology

- + Course code:** CLT210 C
- + Specialty:** Clinical Toxicology .
- + Number of points (CP):** Didactics:2 CP(40%); training: 3CP (60%) , **Total: 5CP(100%).**
- + Department (s) delivering the course:** Department of Forensic Medicine and clinical Toxicology, Faculty of medicine, Assuit University.

- + Coordinator (s):**
 - **Course coordinator:** Prof.Dr. Hayam Zakaria
 - **Assistant coordinator (s):** Prof. Dr. Saly Yehia

- + Date last reviewed:**4/2022.

- + General requirements (prerequisites) if any:** none

- + Requirements from the students to achieve course ILOs are clarified in the joining log book.**

2. Course Aims

- 2-The candidate acquire the basic knowledge and principles as well as practical skills of general toxicology that are necessary for clinical reasoning and management of common situations related to clinical toxicology in practice to be;
- 2/1- competent in the clinical evaluation of acute intoxicated patients and identify those who need lifesaving procedures.
- 2/2- Share in the general management of an acutely intoxicated patient mainly perform the elimination procedure
- 2/3- Diagnose and state the proper management of complications due to acute intoxication
- 2/4- To apply background knowledge of the basic toxicology sciences in explaining special toxicological systemic insults and atypical pictures in extremes of age, pregnancy and diseases.

3. Course intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	Methods of teaching/ learning	Methods of Evaluation
<p>A. Describe in details the pathophysiology, toxic causes, clinical picture and diagnosis of the following conditions;</p> <ul style="list-style-type: none"> - Complications of poisoning (respiratory, neurological, cardiovascular and metabolic) - The steps of the general management of 	<p>Lectures – tutorials- assignments – seminars - discussions</p>	<p>Written examination+ attendance+ assignments</p>

acutely intoxicated patients.		
B. Illustrate the different body systems response to poisoning including the atypical picture of acute poisoning in pregnancy, extremes of age and multiple overdoses		
C. State update and evidence based Knowledge of therapeutic indications and side effects of drugs.		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to general toxicology.		
E. Mention the basic ethical and medicolegal principles relevant to the general toxicology.		
F. Mention the basics of quality assurance to ensure good clinical care in his field		
G. Mention the ethical and scientific principles of medical research.		
H. State the impact of common health problems in the field of specialty on the society.		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common emergency related to Toxicology.	Case-studies, discussing a problem	Written examination+ attendance+ assignments
B-Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to general toxicology like: -Critical life threatening complications of acute intoxications and conditions needing immediate intervention.		

-Management procedure and the proper pathway care in intoxication. - The atypical clinical pictures to special conditions as extremes of age and pregnancy.		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of the general toxicology.		

C-Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine patients in caring and respectful behaviors.	Didactic (lectures, seminars, tutorial) -Inpatient -Case presentation -Direct observation	Written examination+ attendance+ assignments+ practical exam+ logbook assessment
B. Order the proper required investigational procedure for the general evaluation of the patient conditions mentioned in AA &AB.		
C-Perform efficiently in management and evaluation of patients with different intoxication conditions mentioned above such as; - Full and informative general and systemic clinical examination of an intoxicated patient. - Proper procedures used for detoxification and elimination of poisoning.		
D. Use information technology to support patient care decisions and patient education in common clinical situations related to		
E. Provide health care services aimed at preventing health problems related to general toxicology .		
F-Provide patient-focused care in common conditions related to general toxicology , while		

working with health care professionals, including those from other disciplines.		
G-Write competently all forms of patient charts and sheets in different intoxication conditions including reports evaluating these charts and sheets.(Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records)		

D-General Skills
Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology(audit, logbook)	-Case presentation -Observation and supervision -Written & oral communication	-Log book & portfolio
B. Appraises evidence from scientific studies(journal club)	-Clinical round with senior staff -Observation -Post graduate teaching	- presentation - Log book - Check list
C. Conduct epidemiological Studies and surveys.		
D. Perform data management including data entry and analysis.	Clinical round with senior staff -Perform under supervision of senior staff experience	

E. Facilitate learning of junior students and other health care professionals.		
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Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F-Maintain therapeutic and ethically sound relationship with patients.	-Observation & supervision -Didactic	Simulation Record review (report)
G-Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H- Provide information using effective nonverbal, explanatory, questioning, and writing skills.		
I. Work effectively with others as a member of a health care team as a toxicologist or other professional group within a team, in preparing research articles or report.		
J. Present a case in Toxicology		
K- Council patients and families about emergency in Toxicology		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation

L-Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	-Observation & supervision -Didactic	-Objective structured clinical examination -Patient survey
M- Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		- 360o global rating
N- Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		-Objective structured clinical examination -360o global rating

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
O-Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	-360o global rating
P-Practice cost-effective health care and resource allocation that does not compromise quality of care.		-Check list evaluation of live or recorded performance
Q- Assist patients in dealing with system complexities.		-360o global rating - Patient survey

4. Course contents (topic s/modules/rotation Course Matrix

Time Schedule: First Part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skills	General Skills
Complications of poisoning (respiratory, neurological, cardiovascular and metabolic)	A-H	A-D	A-G	A-Q
The steps of the general management of acutely intoxicated patients.	A-H	A-D	A-G	A-Q
The different body systems response to poisoning including the atypical picture of acute poisoning in pregnancy, extremes of age and multiple overdose	A-H	A-D	A-G	A-Q

5. Methods of teaching/learning:

- 1-Lectures on specific topics.
2. Practical classes.
3. Demonstrations.
4. Scientific meetings

6. Methods of teaching/learning: for students with poor achievements

- 1-Extra didactic (lectures, seminars, tutorial).
- 2- Extra Computer laboratory .

7. assessment methods:

Student Assessment Methods

- .1 - Essay written
- .2 - Practical exam
- .3 - Clinical exam and check list application
- .4 - MCQ exam
- .5 - Research article presentation

Weighing of assessments

Written examination	50 marks
Oral examination	50 marks
Total	100 marks

8. List of references

- Ellenhorn's Medical Toxicology, Matthew J. Ellenhorn Williams & Wilkins, 1997
- Dreisbach's handbook of poisoning, Bev-Lorraine True, Robert Hastings Dreisbach, CRC Press, 13th edition, 2017
- Goldfrank, Lewis R.; Howland, Mary Ann; Hoffman, Robert S.; Nelson, Ewis S.; Lewin, Neal A (2019): Goldfrank's Toxicologic Emergencies, 11th ed. McGraw Hill / Medical.

9. Signatures

**Principle Course Coordinator: Prof
Dr: Hayam Zkaria
Assistnt coordinator Prof Dr:-Aml
Ali.....**

**Head of the Department:
Prof .Dr Randa Hussein AbdelHady**

Date:	Date:
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Second part

Speciality courses

Course 6: Clinical Toxicology.

Course 7: Intensive care for poisoning case

Weighting of these courses, time table and rotations.

Units' Titles' list	% from total	Level (Year)	Core Credit points		
			Didactic	training	Total
Clinical toxicology	75%				
Unit 1: Dependence and Illicit substances		1,2,3	6	14	20
Unit2: Special Toxicology		1,2,3	12	58	70
Course 7 : : Intensive care for poisoning cases	25%	1,2,3	6	24	30
			24	96	120

Course 6: Clinical toxicology

- + **Name of department:** Forensic Medicine and clinical Toxicology
- **Faculty of Medicine**
- **Assiut University**
- **2022-2023**
- **This course is subdivided into 2 units;**
- **Unit 1: Dependence and illicit substances**
- **Unit 2: Special Toxicology.**

1. Course data

- + **Course Title:** Clinical Toxicology
- + **Course code:** CLT210 D
- + **Specialty** Clinical Toxicology
- + **Number of **points(CP):**18 CP(20%) for didactics, 72CP (80%)for training, total 90 CP(100%).**
- + **Department (s) delivering the course:** Department of Forensic Medicine and clinical Toxicology
- + **Coordinator (s):**
 - **Course coordinator: Prof.Dr. Randa H. Abd Elhady**
 - **Assistant coordinator (s) Assitant Prof.Dr.Heba A Yassa**
- + **Date last reviewed:**4-2022
- + **General requirements (prerequisites) if any: None**

- ✚ Requirements from the students to achieve course ILOs are clarified in the joining log book.

Course6;Unit1: Dependence and Illicit substances

1. Unit data

- ✚ **Course Title:** Clinical Toxicology,
- ✚ **Unit title:** **Dependence and illicit substances**
- ✚ **Code:**CLT210D

- ✚ **Specialty:** Clinical Toxicology.

- ✚ Number of **points (CP):12 CP(17.1%) for didactics, 58CP (82.9%)for training, total 70 CP(100%).**
- ✚ **Department (s) delivering the course:** Department of Forensic Medicine and clinical Toxicology
- ✚ **Coordinator (s):**
- ✚ **Course coordinator:** **Prof.Dr.Hayam Zakaria.**
 - **Assistant coordinator (s): Prof.Dr. Safaa Maher George**
- ✚ **General requirements (prerequisites) if any: none.**
- ✚ Requirements from the students to achieve course ILOs are clarified in the joining log book.

2. Unit Aims

- The candidate should be acquiring the basic knowledge and principles as well as practical and clinical skills that are necessary for clinical reasoning and management of common conditions related to drugs Dependence and illicit substances as;

2/1- To acquire an appropriate background of drug dependence and methods of diagnosis using clinical methods, challenge tests and analytical techniques.

2/2- To Identify and manage medical complications of drug dependence including overdose.

2/3-To acquire competency in detecting drugs of abuse using analytical tools

2/4- To acquire skills in detoxification maneuvers using internationally approved techniques and in ethical way

2/5- To practice in general medical examination and develop skills in differentiating diseases by proper integration of assembled clinical data.

2/6- To develop the skills to predict and manage possible signs of ominous system failure and diseases of organs targeted by poisons.

2/7-To acquires the talent and experience of rapid management of medical emergencies.

3. Unit intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
<p>A. Describe the etiology, clinical picture, diagnosis and management of the drugs dependence and the following clinical conditions:</p> <ul style="list-style-type: none"> -The clinical picture of overdose by drugs of abuse and their complications. - The clinical picture of chronic use for every drug and their complications. -Multi-drug use, patient's clinical status, chronicity and intensity of addiction. 	<p>Lectures – tutorials- assignments – seminars - discussions</p>	<p>Written examination+ attendance+ assignments</p>
<p>B. Mention the following principles and tools related to Dependence and illicit substances;</p> <ul style="list-style-type: none"> -The pathophysiological changes of drugs of dependence including central neurotransmitter changes. -The mechanisms employed for different detoxification procedures. - The rules, including ethical regulations, governing the different methods of detoxification 		

<p>procedures in different parts of the world.</p> <ul style="list-style-type: none"> - The value, dangers and limitations of detoxification in every drug, multi-drug use, patient's clinical status, chronicity and intensity of addiction. - The role of toxicological analysis in the follow up of ex-addicts. - The rules, including ethical regulations, governing the different methods of detoxification procedures in different parts of the world. 		
C. State update and evidence based Knowledge of therapeutic indications and effects of drugs dependence.		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Dependence and illicit substances in toxicology		
E. Mention the basic ethical and medicolegal principles relevant to Dependence and illicit substances in toxicology.		
F. Mention the basics of quality assurance to ensure good clinical care in his field		
G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in the field of speciality on the society.		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common diseases related to Dependence and	Case-studies, discussing a problem	Written examination+ attendance+

illicit substances in toxicology.		assignments
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to Dependence and illicit substances in toxicology.		
C. Design and present cases , seminars in common problem		
D-Formulate management plans and alternative decisions in different situations in the field of the Dependence and illicit substances in toxicology		

C-Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine patients with drug dependence and substance abuse in caring and respectful behaviors.	Didactic (lectures, seminars, tutorial) -Inpatient -Case presentation -Direct observation	Written examination+ attendance+ assignments+ practical exam+ logbook assessment
B. Order the proper investigations and challenge tests pertinent to the clinical data and preliminary diagnosis of the conditions mentioned above.		
C. Interpret the findings of diagnostic procedures and investigations used for diagnosis of the conditions mentioned above.		
D. Perform the following therapeutic procedures used for conditions mentioned above like; - Decontamination procedures in a safe and appropriate		

<p>technique according to the standards of care.</p> <p>- Procedures and therapeutic actions in accordance of emerging complications of drug of abuse as special devices oxygenation, special mode ventilation, arrhythmia correction.</p>		
E. Prescribe the therapeutic procedures used for conditions mentioned in AA, AB.		
F. Carry out patient management plans for common conditions related to drug dependence and substance abuse in toxicology.		
G. Use information technology to support patient care decisions and patient education in common clinical situations related to drug dependence and substance abuse in toxicology.		
H. Provide health care services aimed at preventing health problems related to drug dependence and substance abuse in toxicology.		
I-Provide patient-focused care in common conditions related to drug dependence and substance abuse in toxicology, while working with health care professionals, including those from other disciplines.		
J-Write competently all forms of patient charts and sheets related to drug dependence and substance abuse in toxicology including reports evaluating these charts and sheets.(Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records)		

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation

A. Perform practice-based improvement activities using a systematic methodology(audit, logbook)	-Case presentation -Observation and supervision -Written & oral communication	-Log book & portfolio
B. Appraises evidence from scientific studies(journal club)	-Clinical round with senior staff -Observation -Post graduate teaching	- presentation - Log book - Check list
C. Conduct epidemiological Studies and surveys.		
D. Perform data management including data entry and analysis through internet contact with other analytical toxicology centers.	Clinical round with senior staff -Perform under supervision of senior staff experience	
E. Facilitate learning of junior students and other health care professionals.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients.	-Observation & supervision -Didactic	Simulation Record review (report)
G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		

I. Work effectively with others as a member of a health care team or other professional group.		
J. Present a case related to drug dependence and substance abuse		
K. Write a report in toxicology about drug dependence and substance abuse		
L. Counsel patients and families about emergency of drug dependence and substance abuse in Toxicology		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	-Observation & supervision -Didactic	-Objective structured clinical examination -Patient survey
N. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		-Objective structured clinical examination -360o global rating
O. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		- 360o global rating

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
P. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff	-360o global

	experience	rating
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		-Check list evaluation of live or recorded performance
R. Assist patients in dealing with system complexities.		-360o global rating -Patient survey

Course 6; Unit 2: Special Toxicology

1. Unit data

+ Course Title: clinical Toxicology

+ Unit title: special toxicology.

+ Code:CLT210D

+ Specialty Clinical Toxicology

+ Department (s) delivering the course: Department of Forensic Medicine and clinical Toxicology

+ Coordinator (s):

- Course coordinator: Prof.Dr. Hayam Zakaria.

- Assistant coordinator (s): Prof.Dr. Saly Yehia

+ Date last reviewed: 4-2022

+ General requirements (prerequisites) if any :None

+ Requirements from the students to achieve course ILOs are clarified in the joining log book.

2. Unit Aims

-The candidate should be acquire the basic knowledge and principles as well as practical and clinical skills that are necessary for clinical reasoning and management of common conditions related to special toxicology as;

2/1 To be competent in the clinical evaluation and provide immediate and correct general and specific emergency management of an acutely intoxicated patient

2/2-To identify and manage properly all complications due to acute intoxication

2/3- To apply background knowledge of the basic toxicology sciences in conducting managerial and professional skill in hospital emergency and outpatient clinics and provide optimal health services to acute , chronic, occupational and environmental intoxications.

3. Unit intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
<p>A. Describe the etiology, clinical picture, diagnosis and management of the following clinical conditions and situations related to special toxicology as follows;</p> <p>- common acute intoxications with drugs and chemicals</p> <p>-acute clinical picture and complications of common drugs and chemical acute intoxications with:</p> <p>Over the Counter drugs</p> <ul style="list-style-type: none"> ▪ Acetaminophen ▪ Salicylates ▪ Non Steroidal Anti-Inflammatory Drugs ▪ Vitamins antioxidants and body builders ▪ Anorexigenic drugs, Obesity Drugs ▪ Cephalosporins and Penicillins ▪ Macrolides Quinolones Aminoglycosides ▪ Antituberculous drugs <p>Central Nervous System Drugs</p> <ul style="list-style-type: none"> ▪ Antidepressants ▪ Neuroleptics ▪ Lithium ▪ Sedatives hypnotics (Benzodiazepines, Barbiturates, Meprobamate, Zopiclone, zolpidem, Melatonin receptor, bromides, plant origin sedatives.) Anxiolytics Others (Buspirone...) ▪ Muscle relaxants Others ▪ Antiepileptics <p>Respiratory Drugs</p> <ul style="list-style-type: none"> ▪ Theophylline and Xanthines 	<p>Lectures –</p> <p>tutorials- –</p> <p>assignments –</p> <p>seminars -</p> <p>discussions</p>	<p>Written examination+</p> <p>attendance+</p> <p>assignments</p>

<ul style="list-style-type: none"> ▪ Beta2-adrenergic receptor agonist <p>Cardiovascular Drugs</p> <ul style="list-style-type: none"> ▪ Digitalis preparations ▪ Beta blockers ▪ Diuretics ▪ Calcium Channel Blockers ▪ Antiarrhythmics ▪ Antihypertensives ▪ Nitrates <p>Drugs of Abuse(acute intoxication)</p> <ul style="list-style-type: none"> ▪ Opiates and opioids ▪ Cannabis Alcohol ▪ Amphetamines ▪ Cocaine <p>Metals and salts</p> <ul style="list-style-type: none"> ▪ Lead ▪ Mercury ▪ Arsenic ▪ Iron <p>Corrosives (Acids, Alkalis, chlorine)</p> <p>Chemicals</p> <ul style="list-style-type: none"> ▪ Toxic Gases (Carbon monoxide, cyanide, chlorine, hydrogen sulfide...) ▪ Toxic Alcohols and Glycols ▪ Rodenticides (Phosphides, anticoagulants, Boron, Carbamates) ▪ Insecticides (Organophosphates, Organochlorines, Carbamates, Pyrethroids, Others) ▪ Herbicides (Paraquat, diquat, atrazine) ▪ Dioxins ▪ Petroleum distillates and hydrocarbons ▪ Detergents, Dyes, food colors and preservatives <p>Food Poisoning (Bacterial, viral, chemical, endogenous...)</p> <ul style="list-style-type: none"> ▪ Botulism 		
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<ul style="list-style-type: none"> ▪ Ciguatera, Paralytic shellfish. Scombroid ▪ Food allergy versus poisoning <p>Animal Envenomation</p> <ul style="list-style-type: none"> ▪ Scorpion ▪ Snakes ▪ Spider Bees and wasps and Marine <p>Toxic Plants</p> <ul style="list-style-type: none"> ▪ Mushrooms ▪ Mycotoxins, Houseplant ▪ Atropine, Hyoscine (atropa belladonna & related plants) Other hallucinogenic psychoactive plants(Nutmeg, khat, supari, valerian.) <p>Operating Toxicological Disaster</p> <p>Chemical Warfare (including biological warfare of toxicological importance)</p> <p>Radiation toxicity.</p>		
<p>B-Mention the following principles related to conditions mentioned above;</p> <ul style="list-style-type: none"> - Diagnostic investigational procedures that help in diagnosis of acute and chronic intoxications. -The detailed management of the acute intoxicated patient. 		
<p>C. State update and evidence based Knowledge of the pathophysiology common acute intoxications with drugs and chemicals as well as therapeutic guidelines.</p>		
<p>D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to special Toxicology</p>		
<p>E. Mention the basic ethical and medicolegal principles relevant to special Toxicology.</p>		
<p>F. Mention the basics of quality assurance to ensure good clinical care in his field</p>		

G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in the field of specialty on the society.		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common emergency related to special Toxicology.	Case-studies, discussing a problem	Written examination+ attendance+ assignments
B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to special toxicology like: -Acute intoxications, and conditions needing immediate intervention. -Management procedure and the proper pathway of care of acute of intoxications. - Competency in solving problems revolving around acute intoxications with referral to medical ethics and medico-legal responsibilities - Basic toxicological sciences in the prevention of acute intoxicated cases. - Selection of research points that require evidence based research.		
C. Design and present cases , seminars in common problem mentioned above.		
D-Formulate management plans and alternative decisions in different situations in the field of special toxicology.		

C-Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine patients in caring and respectful behaviors.	Case-studies, discussing a problem shift night	Written examination+ attendance+ assignments+ practical exam
B. Order the diagnostic procedures for the conditioned mentioned above.		
C. Interpret all procedures used for detoxification and elimination of poisoning.		
D. Perform the following procedures efficiently, i.e.;		
- Full and informative general and systemic clinical examination of an intoxicated patient.		
- All procedures used for detoxification and elimination of poisoning.		
- Applying competently protocols for specific and antidotal management of acute intoxicated cases.		
E. Prescribe the therapeutic procedures used for detoxification and elimination of poisoning.		
F. Carry out patient management plans for common conditions related to special toxicology .		
G. Use information technology to support patient care decisions and patient education in common clinical situations related to special toxicology .		
H. Provide health care services aimed at preventing health problems related to special toxicology .		
I-Provide patient-focused care in common conditions related to special toxicology , while working with health care professionals, including those from other disciplines.		
J-Write competently all forms of patient charts and sheets in special toxicology including reports evaluating these charts and sheets.(Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records)		

D-General Skills
Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology(audit, logbook)	-Case presentation -Observation and supervision -Written & oral communication	-Log book & portfolio
B. Appraises evidence from scientific studies(journal club)	-Clinical round with senior staff -Observation -Post graduate teaching	- presentation - Log book - Check list
C. Conduct epidemiological Studies and surveys.	Clinical round with senior staff	
D. Perform data management including data entry and analysis.		
E. Facilitate learning of junior students and other health care professionals.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients.	-Observation & supervision -Didactic	Simulation Record review (report)
G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		
I. Work effectively with others as a member of a health care team or other professional group.		
J. Present a case in Toxicology		
K. Counsel patients and families about emergency in Toxicology		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	-Observation & supervision -Didactic	-Objective structured clinical examination -Patient survey
N. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		- 360o global rating
O. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		-Objective structured clinical examination -360o global rating

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
P. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	-360o global rating
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		-Check list evaluation of live or recorded performance
R. Assist patients in dealing with system complexities.		-360o global rating - Patient survey

**4. Course contents (topic s/modules/rotation
Course Matrix**

Time Schedule: Second part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skills	General Skills
Unit 1: Dependence and Illicit substances				
- Etiology, clinical picture, diagnosis and managements of drug overdoses	A	A-D	A-J	A-R
- Ethical regulations of drug of abuse	B	A-D	A-J	A-R
- Pathophysiology of drug of abuse	B	A-D	A-J	A-R
- Therapeutic indications of drug of abuse	C-D	A-D	A-J	A-R
- Medico legal responsibilities of drug of abuse	E	A-D	A-J	A-R
- Quality assurance in clinical care, ethics and the related health problems	F-H	A-D	A-J	A-R
Unit 2 :special toxicology				
- Etiology, clinical picture, diagnosis and management of acute toxicity of different poisons	A-H	A-D	A-J	A-R
- Etiology, clinical picture, diagnosis and management of chronic toxicity of different poisons	A-H	A-D	A-J	A-R
- Central nervous system	A-H	A-D	A-J	A-R

toxicity				
- Respiratory drug toxicity	A-H	A-D	A-J	A-R
- Cardiovascular drug toxicity	A-H	A-D	A-J	A-R
- Metals and salts	A-H	A-D	A-J	A-R
- Corrosives (Acids, Alkalis, chlorine) Chemicals	A-H	A-D	A-J	A-R
- Food Poisoning (Bacterial, viral, chemical, endogenous...)	A-H	A-D	A-J	A-R
- Animal Envenomation	A-H	A-D	A-J	A-R
- Toxic Plants	A-H	A-D	A-J	A-R
- Operating Toxicological Disaster	A-H	A-D	A-J	A-R
- Chemical Warfare (including biological warfare of toxicological importance)	A-H	A-D	A-J	A-R
- Radiation toxicity.	A-H	A-D	A-J	A-R

5. Course Methods of teaching/learning:

- 1-Lectures on specific topics.
2. Practical classes.
3. Demonstrations.
4. Scientific meetings .
5. Shift night

6. Course Methods of teaching/learning: for students with poor achievements

- 1-Extra didactic (lectures, seminars, tutorial).
2. Extra Computer laboratory

7. Course assessment methods:

- Student Assessment Methods

- 1 Short essay to assess knowledge
- 2 MCQs to assess knowledge and intellectual skills

3 Oral exams to assess intellectual, professional and general skills.

4-Practical exam

5-Clinical exam and check list application

6-research article presentation

Weighing of assessments

unit 1	
Written and MCQ examination	150 marks
Oral examination	75marks
Practical& clinical	75marks
Total	300 marks
unit 2	
Written and MCQ examination:	150 marks
Oral examination	75marks
Practical & clinical	75marks
Total	600 marks

8. List of references

List of References

.1- Course Notes (paper and / or electronic)

...Provided by staff members

.2- Essential Books (Text Books)

-Clarke's analysis of drugs and poisons,Anthony C. Moffat
Pharmaceutical Press, 2011 - Medical

-Goldfrank clinical toxicology,11 th edition,Robert S. Hoffman,
Lewis S. Nelson, MD, Lewis R. Goldfrank, Mary Ann Howland,
Neal A. Lewin, Silas W Smith ,McGraw-Hill Education, Apr 11,
2019

3-Kalipatnapu N. Rao (2012): Forensic Toxicology: Medico-Legal Case
Studies. 1st ed. CRC Press.

Handbook of medical toxicology,Peter Viccellio

Little, Brown, and Company, 1993 - Medical

.3- Recommended Books

- Goldfrank, Lewis R.; Howland, Mary Ann; Hoffman, Robert S.; Nelson, Ewis S.; Lewin, Neal A (2019): Goldfrank's Toxicologic Emergencies, 11th ed. McGraw Hill / Medical.

-Haddad : Haddad and Winchester's Clinical Management of Poisoning and Drug Overdose, Michael W. Shannon, Stephen W. Borron, Michael J. Burns (MD.), Lester M. Haddad, James F. Winchester, Saunders/Elsevier, 2007 - Medical.

- Ellenhorn's Medical Toxicology, 1997.

9. Signatures

Unit 1 Coordinator: Prof Hayam Zakaria	Head of the Department: Prof .Dr Randa Hussein AbdelHady
Date:	Date:
Unit 2 Coordinator: Prof.Dr. Safaa Maher Goerge.	Head of the Department: Prof .Dr Randa Hussein AbdelHady
Date:	Date:

Course7: Intensive care of poisoned patients

1. Course data

- + **Course Title:** Intensive care of poisoned patients
- + **Course code:** CLT229
- + **Specialty** Clinical Toxicology
- + **Number of points (CP):**6CP (20%) for didactics(),24CP (80%) for training, total 30CP(100%).
- + **Department (s) delivering the course:** Department of Anesthesia and Intensive care in conjunction with department of Forensic medicine and clinical toxicology.
- + **Coordinator (s):**
 - **Course coordinator:** Prof.Dr. Hayam Zakaria
 - **Assistant coordinator (s):**
 - Prof.Dr. Safaa Maher goerge
 - AssociateProf.Dr. Nora zidan
- + **Date last reviewed:**4-2022
- + **General requirements (prerequisites) if any:** none
- + **Requirements from the students to achieve course ILOs are clarified in the joining log book.**

2. Course Aims

- The candidate should be acquire the basic knowledge and principles as well as practical and clinical skills that are necessary for clinical reasoning and management of common conditions of Intensive care of poisoned patients related to toxicology as;
- 2/1- To be competent in the emergency clinical evaluation and management of an acutely intoxicated patient. Acutely ill patient suffering acute intoxications immediate and correct general and specific emergency management of
- 2/2-To identify and manage acute systemic disturbances and failure and properly manage all complications due to acute intoxication
- 2/3-To express skills and competence in dealing with resuscitative measures as antidotes administration, oxygenation, monitoring, and mechanical ventilation adjustments suitable for acutely intoxicated patient based on the recognized clinical toxic effects of poisons.

3. Course intended learning outcomes (ILOs):

A-Knowledge and understanding

ILOs	Methods of teaching/ learning	<i>Methods of Evaluation</i>
<p>A. Describe etiology, clinical picture, diagnosis and management of the common clinical conditions in ICU need the resuscitative measures and critical care modalities in patients with acute or chronic intoxications complicated with system failure.i.e.;</p> <ul style="list-style-type: none"> - Usual evolution of poisoning. - The prognostic signs and interpretation of their significance using the investigative tools and toxicology laboratory results. - the basis of the critical care antidotes and drugs, equipment and their functioning, use indications, values, complications and limitations according to type of poisons. - The preset parameters of mechanical ventilation, adjustments, meaning of monitoring value for all types of intoxication, stage of the disease and circumstances. - The monitoring value of electrocardiographic changes, significance in different intoxication and emergency management. 	<p>Lectures – tutorials- assignments – seminars - discussions</p>	<p>Written examination+ attendance+ assignments</p>
<p>B. Mention the following principles of ICU and poisoning; like</p> <ul style="list-style-type: none"> -The basis of elimination and detoxification procedures, their potential values and risks and their indications. -The basis and indications of hemodialysis and recommend specific prescriptions for every 		

<p>poison and other circumstances.</p> <p>- The basis of other procedures helping the eliminations of poison as peritoneal dialysis, hemofiltration and hem perfusion.</p> <p>-The required emergency investigational procedures in diagnosis of acute and chronic intoxications.</p> <p>-The details of management of the acute intoxicated patient.</p>		
C. State update and evidence based Knowledge of Therapeutic measures for management of conditions in ICU mentioned above.		
D. Memorize the facts and principles of the relevant basic and clinically supportive sciences related to Intensive care of poisoned patients		
E. Mention the basic ethical and medicolegal principles relevant to the Intensive care of poisoned patients.		
F. Mention the basics of quality assurance to ensure good clinical care in his field		
G. Mention the ethical and scientific principles of medical research		
H. State the impact of common health problems in the field of specialty on the society.		

B-Intellectual outcomes

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Correlates the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common emergency related to Intensive care of poisoned patients.	Case-studies, discussing a problem	Written examination+ attendance+ assignments
B-Demonstrate an investigatory and analytic thinking (problem solving) approaches to		

<p>common clinical situations related to Intensive care of poisoned patients, like;</p> <ul style="list-style-type: none"> - Acute intoxications and their vital complications on emergency basis interpreting the clinical data and selection of immediate intervention. -The monitoring values and significance of clinical changes for rapid and immediate therapeutic intervention using antidotes, drugs or resuscitative equipment. -Modification of the therapeutic modalities of equipment according to the values and calculations of clinical and machine data. -Evaluation the patient clinical condition by selecting the proper modality. 		
<p>C. Design and present cases, seminars in common problem and proper management plan.i.e.</p> <ul style="list-style-type: none"> - The proper pathway management of care of acute of intoxications. - Critical care tools used in the management of the intoxicated patient and troubleshooting of every equipment and express competence in dealing and correcting it - The value of documentation and cumulative critical care observation for subsequent decision making concerning the management of acute intoxications - Formulation of questions on research points that require evidence based research. -Application of basic toxicological sciences in the prevention of acute intoxicated cases. 		
<p>D-Formulate management plans and alternative decisions in different situations in the field of the Intensive care of poisoned patients</p>		

C-Practical skills (Patient Care)

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Obtain proper history and examine poisoned patients in ICU in caring and respectful behaviors.	Case-studies, discussing a problem shift night clinical round	Written examination+ attendance+ assignments practical exam problem solving
B. Order the diagnostic procedures of the Intensive care of poisoned patients related to conditions mentioned above.		
C. Carry out patient management plans for common conditions related to the Intensive care of poisoned patients. i.e. - Full and informative general and systemic clinical examination of an intoxicated patient. - Investigational approach on emergency basis for clarification of the detailed diagnosis, severity and possible systemic affection. - the Required intervention and procedure, and expressive competence in performing them, such as; elimination procedures as emesis, gastric lavage, assuring airway and endotracheal intubation, AMBU resuscitation and mechanical ventilation, assessment of central venous pressure, humidification of airway, oxygenation, nebulizer, -use of special modality ventilation, using cardiac monitoring for starting or terminating antidotes or drugs or for other decision making therapeutic modality, defibrillation and other minor and major procedures. - All procedures used for detoxification and elimination of poisoning - Applying protocols for specific and antidotal management of acute intoxicated cases.		

- emergency management of acute life threatening conditions as arrest, treatment of shock, seizures, respiratory failure.		
D. Use information technology to support patient care decisions and patient education in common clinical situations related to the Intensive care of poisoned patients		
E. Provide health care services aimed at preventing health problems related to the Intensive care of poisoned patients.		
F-Provide patient-focused care in common conditions related to the Intensive care of poisoned patients, while working with health care professionals, including those from other disciplines		
G-Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records)		

D-General Skills

Practice-Based Learning and Improvement

ILOs	Methods of teaching/ learning	Methods of Evaluation
A. Perform practice-based improvement activities using a systematic methodology(audit, logbook)	-Case presentation -Observation and supervision -Written & oral communication	-Log book & portfolio
B. Appraises evidence from scientific studies(journal club)	-Clinical round with senior staff -Observation -Post graduate teaching	- presentation - Log book - Check list
C. Conduct epidemiological Studies and surveys.		
D. Perform data management including data entry and analysis.	Clinical round with senior	

	staff -Perform under supervision of senior staff experience	
E. Facilitate learning of junior students and other health care professionals.		

Interpersonal and Communication Skills

ILOs	Methods of teaching/ learning	Methods of Evaluation
F. Maintain therapeutic and ethically sound relationship with patients.	-Observation & supervision -Didactic	Simulation Record review (report)
G. Elicit information using effective nonverbal, explanatory, questioning, and writing skills.		
H. Provide information using effective nonverbal, explanatory, questioning, and writing skills.		
I. Work effectively with others as a member of a health care team or other professional group.		
J. Present a case in Toxicology		
K. Council patients and families about emergency conditions of poisoned patients in the Intensive care unit.		

Professionalism

ILOs	Methods of teaching/ learning	Methods of Evaluation
M. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society	-Observation & supervision -Didactic	-Objective structured clinical examination -Patient survey
N. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices		- 360o global rating
O. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities		-Objective structured clinical examination -360o global rating

Systems-Based Practice

ILOs	Methods of teaching/ learning	Methods of Evaluation
P. Work effectively in relevant health care delivery settings and systems.	-Observation -Senior staff experience	-360o global rating
Q. Practice cost-effective health care and resource allocation that does not compromise quality of care.		-Check list evaluation of live or recorded performance
R. Assist patients in dealing with system complexities.		-360o global rating - Patient survey

4. Course contents (topic s)
Course Matrix

Time Schedule: Second part

Topic	Covered ILOs			
	Knowledge	Intellectual	Practical skills	General Skills
- Basics and clinical supportive sciences diagnosis and management of common emergency related to Intensive care of poisoned patients.	A	A-G	A-E	A-R
- Acute intoxications and their vital complications	B	A-G	A-E	A-R
- Monitoring values and its significate	B	A-G	A-E	A-R
- Competence in interpreting arterial blood gas, other laboratory parameters of significance and monitoring values of cardiac monitor, electrocardiography, imaging, ventilation, central venous pressure, response of antidotes and elimination procedures.	B	A-G	A-E	A-R
- Evaluation of patients	B	A-G	A-E	A-R
- Common problems and their managements from the toxicological views	C	A-G	A-E	A-R
- Management plan of toxicological emergencies	D	A-G	A-E	A-R

5. Course Methods of teaching/learning:

- 1-Lectures on specific topics.
2. Practical classes.
3. Demonstrations.
4. Scientific meetings

6. Course Methods of teaching/learning: for students with poor achievements

- 1-Extra didactic (lectures, seminars, tutorial).
2. Extra Computer laboratory

7. Course assessment methods:

- 1-Essay written
- .2-Practical exam
- .3-Clinical exam and check list application
- .4- MCQ exams
- .5 -Research article presentations

Weighing of assessments

Written examination:	150marks
Practical& Clinical examination	75
Oral examination	75
Total	300 marks

8. List of references

- 1- Course Notes (paper and / or electronic)
...Provided by staff members
- 2- Essential Books (Text Books)
Handbook of medical toxicology, Peter Viccellio, Little ,Brown and company,1997.
- 3- Recommended Books
 - Goldfrank Toxicologic emergencies Lewis S. Nelson, MD, Lewis R. Goldfrank, Mary Ann Howland, Neal A. Lewin, Silas W Smith ,McGraw-Hill Education, Apr 11, 2019,

- Clinical Toxicology of commercial products, 5th edition, 1984
 - Haddad : Haddad and Winchester's Clinical Management of Poisoning and Drug Overdose, Michael W. Shannon, Stephen W. Borron, Michael J. Burns (MD.), Lester M. Haddad, James F. Winchester, 2007.
 - The ICU Book, by Paul L. Marino, 4th edition, 2014.
 - Clinical Electrocardiography by Ary L. Goldberger, 1999.
- 4- Periodicals, Web Sites, etc
1. www.americanheart.org
 2. <http://toxnet.nlm.nih.gov/>
A cluster of databases on toxicology, hazardous chemicals and related areas.
 3. <http://www.uic.edu/com/er/toxikon>
Discussions, classes and reviews sponsored by The University of Illinois at Chicago.
 4. <http://www.ansci.cornell.edu/plants/index.html>
Database of photos, botanical information, and health information on poisonous plants. Contains links to other related sites
 5. <http://www.hypertox.com/>
Hunter Area Toxicology Service's modules on approximately 25 common toxic drugs and environmental agents, including information on pharmacology, toxicology, and treatment.
 6. <http://www.aapcc.org/>
AAPCC is a nationwide organization of poison centers and interested individuals.
 7. <http://pharminfo.com/phrmlink.html>
Very extensive menu of links to data on pharmaceuticals, biotechnology, and pharmaceutical companies.
 8. <http://www.ace.orst.edu/info/extoxnet/>
Provides a variety of information about pesticides.
 9. <http://www.foodsafety.gov/~mow/intro.html>
This is a site from the US FDA's Center for Food Safety and Applied Nutrition. Useful information on mushroom toxidromes.
 10. <http://www.floridaplants.com/mpois.htm>

Information on poisonous plants and mushrooms from around the world.

11. <http://www.acep.org/>

This site contains the latest news, updates and guidelines for emergency physicians.

12. <http://www.clinicalpharmacology.com/>

Search engine for commonly prescribed drugs with; dosages, indications, interactions, pharmacokinetics, costs and more.

13. <http://www.streetdrugs.org/>

This is a comprehensive collection of drugs of abuse, although the information is somewhat basic it is very comprehensive.

14. <http://www.martindalecenter.com/Pharmacy.html>

Access to Martindale's pharmacy center for drug information.

15. <http://www.ecglibrary.com/>

9. Signatures

Course Zakaria	Coordinator: Hayam	Head of the Department: Prof .Dr Randa Hussein AbdelHady
Date:	Date:	

ANNEX 2

Program Academic Reference Standards (ARS)

1- Graduate attributes for master degree in clinical toxicology

The Graduate (after residence training and master degree years of study) must:

- 1- Have the capability to be a scholar, understanding and applying basics, methods and tools of scientific research and clinical audit in **clinical toxicology**.
- 2- Appraise and utilise scientific knowledge to continuously update and improve clinical practice in related **clinical toxicology**.
- 3- Acquire sufficient medical knowledge in the basic biomedical, clinical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care in the field of **clinical toxicology**.
- 4- Provide patient care that is appropriate, effective and compassionate for dealing with common health problems and health promotion using evidence-based and updated information.
- 5- Identify and share to solve health problems in his speciality.
- 6- Acquire all competencies –including the use of recent technologies- that enable him to provide safe, scientific, and ethical and evidence based clinical care including update use of new technology in **clinical toxicology**.
- 7- Demonstrate interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professions, the scientific community and the public.
- 8- Function as supervisor, and trainer in relation to colleagues, medical students and other health professions.

9- Acquire decision making capabilities in different situations related to **clinical toxicology**

10- Show responsiveness to the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, practice of cost-effective health care, health economics, and resource allocations.

11- Be aware of public health and health policy issues and share in system-based improvement of health care.

12- Show appropriate attitudes and professionalism.

13- Demonstrate skills of lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages in **clinical toxicology** or one of its subspecialties.

2- Competency based Standards for clinical master degree graduates

2.1- Knowledge and understanding

By the end of the program, the graduate should demonstrate satisfactory knowledge and understanding of

2-1-A- Established basic, biomedical, clinical, epidemiological and behavioral sciences related conditions, problem and topics.

2-1-B- The relation between good clinical care of common health problems in the **clinical toxicology** and the welfare of society.

2-1-C- Up to date and recent developments in common problems related to **clinical toxicology**.

2-1-D- Ethical and medicolegal principles relevant to practice in **clinical toxicology**.

2-1-E- Quality assurance principles related to the good medical practice in **clinical toxicology**.

2-1-F- Ethical and scientific basics of medical research.

2.2- Intellectual skills:

By the end of the program, the graduate should be able to demonstrate the following:

2-2-A- Correlation of different relevant sciences in the problem solving and management of common diseases of **clinical toxicology**.

2-2-B- Problem solving skills based on data analysis and evaluation (even in the absence of some) for common clinical situations related to **clinical toxicology**.

2-2-C- Demonstrating systematic approach in studying clinical problems relevant to **clinical toxicology**.

2-2-D- Making alternative decisions in different situations in **clinical toxicology**

2.3- Clinical skills

By the end of the program, the graduate should be able to

2-3-A - Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

2-3-B- Demonstrate patient care skills relevant to **clinical toxicology** for patients with common diseases and problems.

2-3- C- Write and evaluate reports for situations related to the field of **clinical toxicology**.

2.4- General skills

By the end of the program, the graduate should be able to

Competency-based outcomes for Practice-based Learning and Improvement

2-4-A- Demonstrate practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence,, improvements in patient care and risk management.

2-4-B- Use all information sources and technology to improve his practice.

2-4-C- Demonstrate skills of teaching and evaluating others.

Competency-based objectives for Interpersonal and Communication Skills

2-4-D- Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

Competency-based objectives for Professionalism

2-4-E- Demonstrate professionalism behaviors, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

Competency-based objectives for Systems-based Practice

2-4-F- Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to

effectively use system resources to provide care that is of optimal value.

2-4-g- Demonstrate skills of effective time management.

2-4-H- Demonstrate skills of self and continuous learning.

Annex 3, Methods of teaching/learning

Annex 3, Methods of teaching/learning

	Patient care	Medical knowledge	Practice-based learning/Improvement	Interpersonal and communication skills	Professionalism	Systems-based practice
Didactic (lectures, seminars, tutorial)	X	X		X	X	X
journal club,	X	X	X			
Educational prescription	X	X	X	X	X	X
Present a case (true or simulated) in a grand round	X	X	X	X	X	
Observation and supervision	X		X	X	X	X
conferences		X	X	X		X
Written assignments	X	X	X	X	X	X
Oral assignments	X	X	X	X	X	X

Teaching methods for knowledge

- ❖ Didactic (lectures, seminars, tutorial)
- ❖ journal club
- ❖ Critically appraised topic
- ❖ Educational prescription (a structured technique for following up on clinical questions that arise during rounds and other venues).
- ❖ Present a case (true or simulated) in a grand round
- ❖ Others

Teaching methods for patient care

- ❖ Observation and supervision /Completed tasks procedure/case logs
- ❖ On-the-job” training without structured teaching is not sufficient for this skill (checklists).
- ❖ Simulation is increasingly used as an effective method for skill/ teamwork training.

Teaching methods for other skills

- ❖ Written communication (e.g., orders, progress note, transfer note, discharge summary, operative reports, and diagnostic reports).
- ❖ Oral communication (e.g., presentations, transfer of care, interactions with patients, families, colleagues, members of the health care team) and/or non verbal skills (e.g., listening, team skills)
- ❖ Professionalism, including medical ethics, may be included as a theme throughout the program curriculum that includes both didactic and experiential components (e.g., may be integrated into already existing small group discussions of vignettes or case studies and role plays, computer-based modules) and may be modeled by the faculty in clinical practice and discussed with the resident as issues arise during their clinical practice.

Annex 4, Assessment methods

Annex 4, ILOs evaluation methods for Master Degree students.

Method	Practical skills	K	Intellectual	General skills			
	Patient care	K	I	Practice-based learning/ Improvement	Interpersonal and communication skills	Professionalism	Systems-based practice
Record review	X	X	X		X	X	X
Checklist	X				X		
Global rating	X	X	X	X	X	X	X
Simulations	X	X	X	X	X	X	
Portfolios	X	X	X	X	X		
Standardized oral examination	X	X	X	X	X		X
Written examination	X	X	X	X			X
Procedure/ case log	X	X					
OSCE	X	X	X	X	X	X	X

Annex 4, Glossary of Master Degree doctors assessment methods

- ❖ Record Review – Abstraction of information from patient records, such as medications or tests ordered and comparison of findings against accepted patient care standards.
- ❖ Chart Stimulated Recall – Uses the MSc doctor’s patient records in an oral examination to assess clinical decision-making.
- ❖ Mini clinical evaluation: Evaluation of Live/Recorded Performance (single event) – A single resident interaction with a patient is evaluated using a checklist. The encounter may be videotaped for later evaluation.
- ❖ Standardized Patients (SP) – Simulated patients are trained to respond in a manner similar to real patients. The standardized patient can be trained to rate MSc doctor’s performance on checklists and provide feedback for history taking, physical examination, and communication skills. Physicians may also rate the MSc doctor’s performance.
- ❖ Objective Structured Clinical Examination (OSCE) – A series of stations with standardized tasks for the MSc doctors to perform. Standardized patients and other assessment methods often are combined in an OSCE. An observer or the standardized patient may evaluate the MSc doctors.
- ❖ Procedure or Case Logs – MSc doctors prepare summaries of clinical experiences including clinical data. Logs are useful to document educational experiences and deficiencies.
- ❖ PSQs – Patients fill out Patient Survey questionnaires (PSQs) evaluating the quality of care provided by a MSc doctors.
- ❖ Case /problems – assess use of knowledge in diagnosing or treating patients or evaluate procedural skills.
- ❖ Models: are simulations using mannequins or various anatomic structures to assess procedural skills and interpret clinical findings. Both are useful to assess practice performance and provide constructive feedback.

- ❖ 360 Global Rating Evaluations – MSc doctors, faculty, nurses, clerks, and other clinical staff evaluate MSc doctors from different perspectives using similar rating forms.
- ❖ Portfolios – A portfolio is a set of project reports that are prepared by the MSc doctors to document projects completed during the MSc study years. For each type of project standards of performance are set. Example projects are summarizing the research literature for selecting a treatment option, implementing a quality improvement program, revising a medical student clerkship elective, and creating a computer program to track patient care and outcomes.
- ❖ Examination MCQ – A standardized examination using multiple-choice questions (MCQ). The in-training examination and written board examinations are examples.
- ❖ Examination Oral – Uses structured realistic cases and patient case protocols in an oral examination to assess clinical decision-making.
- ❖ Procedure or Case Logs – MSc doctors prepare summaries of clinical experiences including clinical data. Logs are useful to document educational experiences and deficiencies.
- ❖ PSQs – Patients fill out Patient Survey questionnaires (PSQs) evaluating the quality of care provided by MSc doctors.

Annex 5, Program evaluation tools

By whom	Method	sample
Quality Assurance Unit	Reports Field visits	#
External Evaluator (s):According to department council External Examiner (s): According to department council	Reports Field visits	#
Stakeholders	Reports Field visits Questionnaires	#
Senior students	Questionnaires	#
Alumni	Questionnaires	#

Annex 6, Program Correlations:

مصفوفة توافق المعايير القومية القياسية العامة لبرامج الماجستير مع المعايير
 الأكاديمية المعتمدة من كلية الطب □ جامعة أسيوط لدرجة الماجستير في السموم
 الاكلينيكية

I- General Academic Reference Standards (GARS) versus Program ARS

1- Graduate attributes

Faculty ARS	NAQAAE General ARS for Postgraduate programs
1- Have the capability to be a scholar, understanding and applying basics, methods and tools of scientific research and clinical audit in clinical toxicology .	1- إجادة تطبيق أساسيات و منهجيات البحث العلمي واستخدام أدواته المختلفة
2- Appraise and utilise scientific knowledge to continuously update and improve clinical practice in clinical toxicology .	2- تطبيق المنهج التحليلي واستخدامه في مجال التخصص
3- Acquire sufficient medical knowledge in the basic biomedical, clinical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care in clinical toxicology .	3- تطبيق المعارف المتخصصة ودمجها مع المعارف ذات العلاقة في ممارسته المهنية
4- Provide patient care that is appropriate, effective and compassionate for dealing with common health problems and health promotion using evidence-based and update information.	4- إظهار وعيا بالمشاكل الجارية و الرؤى الحديثة في مجال التخصص
5- Identify and share to solve health problems in clinical toxicology .	5- تحديد المشكلات المهنية و إيجاد حلول لها
6- Acquire all competencies that enable him to provide safe, scientific, ethical and evidence based clinical care including update use of new technology in clinical toxicology .	6- إتقان نطاق مناسب من المهارات المهنية المتخصصة، واستخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية

<p>7- Demonstrate interpersonal and communication skills that ensure effective information exchange with individual patients and their families and teamwork with other health professions, the scientific community and the public.</p> <p>8- Function as supervisor, and trainer in relation to colleagues, medical students and other health professions.</p>	<p>7-التواصل بفاعلية و القدرة على قيادة فرق العمل</p>
<p>9- Acquire decision making capabilities in different situations related to clinical toxicology.</p>	<p>8-اتخاذ القرار في سياقات مهنية مختلفة</p>
<p>10- Show responsiveness to the larger context of the health care system, including e.g. the organisation of health care, partnership with health care providers and managers, practice of cost-effective health care, health economics, and resource allocations.</p>	<p>9- توظيف الموارد المتاحة بما يحقق أعلي استفادة و الحفاظ عليها</p>
<p>11- Be aware of public health and health policy issues and share in system-based improvement of health care.</p>	<p>10-إظهار الوعي بدوره في تنمية المجتمع و الحفاظ على البيئة في ضوء المتغيرات العالمية و الإقليمية</p>
<p>12- Show appropriate attitudes and professionalism.</p>	<p>11-التصرف بما يعكس الالتزام بالنزاهة و المصداقية و الالتزام بقواعد المهنة</p>
<p>13- Demonstrate skills of lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages in clinical toxicology or one of its subspecialties.</p>	<p>12-تنمية ذاته أكاديميا و مهنيا و قادرا علي التعلم المستمر</p>

2. Academic standard

Faculty ARS	NAQAAE General ARS for Postgraduate programs
2.1.A -Established basic, biomedical, clinical, epidemiological and behavioral sciences related conditions, problems and topics.	2-1-1-أ-النظريات و الأساسيات المتعلقة بمجال التعلم وكذا في المجالات ذات العلاقة.
2.1.B- The relation between good clinical care of common health problems in clinical toxicology and the welfare of society.	2-1-2-ب-التأثير المتبادل بين الممارسة المهنية وانعكاسها علي البيئة.
2.1. C- Up to date and recent developments in common problems related to clinical toxicology .	2-1-2-ج-التطورات العلمية في مجال التخصص.
2.1. D- Ethical and medicolegal principles relevant to practice in the Speciality .	2-1-2-د-المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص.
2.1. E-Quality assurance principles related to the good medical practice in Speciality .	2-1-2-هـ- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص
2.1. F- Ethical and scientific basics of medical research.	2-1-2-و- أساسيات وأخلاقيات البحث العلمي
2.2. A-Correlation of different relevant sciences in the problem solving and management of common diseases of clinical toxicology .	2-2-أ- تحليل و تقييم المعلومات في مجال التخصص والقياس عليها لحل المشاكل
2.2. B- Problem solving skills based on data analysis and evaluation (even in the absence of some) for common clinical situations related to clinical toxicology .	
2.2. B- Problem solving skills based on data analysis and evaluation (even in the absence of some) for common clinical situations related to clinical	2-2-ب- حل المشاكل المتخصصة مع عدم توافر بعض المعطيات

<p>toxicology.</p>	
<p>2.2. A-Correlation of different relevant sciences in the problem solving and management of common diseases of clinical toxicology.</p>	<p>2-2-ج- الربط بين المعارف المختلفة لحل المشاكل المهنية</p>
<p>2.2. C- Demonstrating systematic approach in studying clinical problems relevant to the clinical toxicology</p>	<p>2-2-د- إجراء دراسة بحثية و /أو كتابة دراسة علمية منهجية حول مشكلة بحثية</p>
<p>2.4.A-Demonstrate practice-based learning and Improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management</p>	<p>2-2-ه- تقييم المخاطر في الممارسات المهنية في مجال التخصص</p>
<p>2.4.A-Demonstrate practice-based learning and Improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific improvements in evidence, patient care and risk management</p>	<p>2-2-و- التخطيط لتطوير الأداء في مجال التخصص</p>
<p>2.2.D- Making alternative decisions in different situations in the field of clinical toxicology.</p>	<p>2-2-ز- اتخاذ القرارات المهنية في سياقات مهنية متنوعة</p>
<p>2.3.A- provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.</p>	<p>2-3-أ- إتقان المهارات المهنية الأساسية و الحديثة في مجال التخصص</p>

<p>2.3.B- Demonstrate patient care skills relevant to clinical toxicology for patients with common diseases and problems.</p>	
<p>2.3.C- Write and evaluate reports for Situation related to clinical toxicology.</p>	<p>2-3-ب- كتابة و تقييم التقارير المهنية</p>
<p>2.3.A- provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. 2.3.B- Demonstrate patient care skills relevant to that clinical toxicology for patients with common diseases and problems.</p>	<p>2-3-ج- تقييم الطرق و الأدوات القائمة في مجال التخصص</p>
<p>2.4.D- Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.</p>	<p>2-4-أ- التواصل الفعال بأنواعه المختلفة</p>
<p>2.4.A-Demonstrate practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management 2.4.B- Use all information sources and technology to improve his practice.</p>	<p>2-4-ب- استخدام تكنولوجيا المعلومات بما يخدم الممارسة المهنية</p>
<p>2.4.A-Demonstrate practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk</p>	<p>2-4-ج- التقييم الذاتي وتحديد احتياجاته التعليمية الشخصية</p>

<p>management</p> <p>2.4.B- Use all information sources and technology to improve his practice.</p> <p>2.4.E-Demonstrate professionalism behavior, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.</p>	
<p>2.4.A-Demonstrate practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, , improvements in patient care and risk management.</p>	<p>2-4-2-د- استخدام المصادر المختلفة للحصول على المعلومات و المعارف</p>
<p>2.4. C- Demonstrate skills of teaching and evaluating others.</p>	<p>2-4-2-ه- وضع قواعد ومؤشرات تقييم أداء الآخرين</p>
<p>2.4. F- Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value.</p>	<p>2-4-2-و- العمل في فريق ، وقيادة فرق في سياقات مهنية مختلفة</p>
<p>2.4.G- Demonstrate skills of effective time management.</p>	<p>2-4-2-ز- إدارة الوقت بكفاءة</p>
<p>2.4.H- Demonstrate skills of self and continuous learning.</p>	<p>2-4-2-ح- التعلم الذاتي و المستمر</p>

*Comparison between ARS and ILOS for master degree in
clinical toxicology*

(ARS)	(ILOS)
<p><u>2-1- Knowledge and understanding</u></p> <p>2-1-A- Established basic, biomedical, clinical, epidemiological and behavioral sciences related conditions, problem and topics.</p>	<p><u>2-1- Knowledge and understanding</u></p> <p>2-1-A- Explain the essential facts and principles of relevant basic sciences including, Forensic Chemistry and Toxicological Analysis. and Clinical Pharmacology related to clinical toxicology.</p> <p>2-1-B- Mention <u>essential facts</u> of clinically supportive sciences including Basics of Internal Medicine, Medico legal Responsibility in poisoning and Physicians Faults and General Toxicology related to clinical toxicology.</p> <p>2-1-C- Demonstrate sufficient knowledge of etiology, clinical picture, diagnosis, prevention and treatment of the common diseases and situations related to clinical toxicology.</p>
<p>2-1-B The relation between good clinical care of common health problem in the clinical toxicology and the welfare of society.</p>	<p>2-1-H- State the impact of common health problems in the field of clinical toxicology on the society and how good clinical practice improve these problems.</p>
<p>2-1-C- Up to date and recent developments in common problems related to the field of clinical toxicology.</p>	<p>2-1-C- Demonstrate sufficient knowledge of etiology, clinical picture, diagnosis, prevention and treatment of the common diseases and situations related to clinical toxicology.</p> <p>2-1-D- Give the recent and update developments in the pathogenesis, diagnosis, prevention and treatment of common diseases related to clinical toxicology</p>
<p>2-1-D- Ethical and medicolegal Principles relevant to practice in the clinical toxicology field.</p>	<p>2-1-E- Mention the basic ethical and medicolegal principles that should be applied in practice and are relevant to the field of clinical toxicology.</p>

<p>2-1-E-Quality assurance principles related to the good medical practice in the clinical toxicology field.</p>	<p>2-1-F- Mention the basics and standards of quality assurance to ensure good clinical practice in the field clinical toxicology.</p>
<p>2-1-F- Ethical and scientific basics of medical research.</p>	<p>2-1-G- Mention the ethical and scientific principles of medical research methodology.</p>
<p><u>2-2- Intellectual skills:</u> 2-2-A-Correlation of different relevant sciences in the problem solving and management of common diseases of the clinical toxicology.</p>	<p><u>2-2- Intellectual skills:</u> 2-2-A- Correlate the facts of relevant basic and clinically supportive sciences with clinical reasoning, diagnosis and management of common diseases of the clinical toxicology.</p>
<p>2-2-B-Problem solving skills based on data analysis and evaluation (even in the absence of some) for common clinical situations related to clinical toxicology.</p>	<p>2-2-B- Demonstrate an investigatory and analytic thinking approach (problem solving) to common clinical situations related to clinical toxicology.</p>
<p>2-2-C- Demonstrating systematic approach in studying clinical problems relevant to the clinical toxicology field.</p>	<p>2-2-C- Design and /or present a case or review (through seminars/journal clubs.) in one or more of common clinical problems relevant to the clinical toxicology field.</p>
<p>2-2-D Making alternative decisions in different situations in the field of the clinical toxicology.</p>	<p>2-2-D- Formulate management plans and alternative decisions in different situations in the field of the clinical toxicology.</p>

Continuous (ARS)	continuous (ILOs)
<p><u>2-3- Clinical skills:</u></p> <p>2-3-A- Provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.</p> <p>2-3-B- Demonstrate patient care skills relevant to that clinical toxicology for patients with common diseases and problems.</p>	<p><u>2/3/1/Practical skills (Patient Care :)</u></p> <p>2-3-1-A- Obtain proper history and examine patients in caring and respectful behaviors.</p> <p>2-3-1-B- Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment for common conditions related to clinical toxicology.</p> <p>2-3-1-C- Carry out patient management plans for common conditions related to clinical toxicology.</p> <p>2-3-1-D- Use information technology to support patient care decisions and patient education in common clinical situations related to clinical toxicology.</p> <p>2-3-1-E- Perform competently non invasive and invasive procedures considered essential for the clinical toxicology</p> <p>2-3-1-F- Provide health care services aimed at preventing health problems related to clinical toxicology.</p> <p>2-3-1-G- Provide patient-focused care in common conditions related to clinical toxicology while working with health care professionals, including those from other disciplines.</p>
<p>2-3-C- Write and evaluate reports for situations related to the field of clinical toxicology.</p>	<p>-3-1-H Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets. (Write a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and maintaining medical records).</p>

<p><u>2-4- General skills</u></p> <p>2-4-A- Demonstrate practice-based learning and improvement skills that involves investigation and evaluation of their own patient care, appraisal and assimilation of scientific evidence, improvements in patient care and risk management</p>	<p><u>2/3/2 General skills</u></p> <p>2-3-2-A- Perform practice-based improvement activities using a systematic methodology (share in audits and risk management activities and use logbooks).</p> <p>2-3-2-B- Appraises evidence from scientific studies.</p> <p>2-3-2-C- Conduct epidemiological studies and surveys.</p>
<p>2-4-B- Use all information sources and technology to improve his practice.</p>	<p>2-3-2-C- Conduct epidemiological studies and surveys.</p> <p>2-3-2-D. Perform data management including data entry and analysis and using information technology to manage information, access on-line medical information; and support their own education.</p>
<p>2-4-C- Demonstrate skills of teaching and evaluating others.</p>	<p>2-3-2-E- Facilitate learning of students other health care professionals including their evaluation and assessment.</p>
<p>2-4-D- Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.</p>	<p>2-3-2-F- Maintain therapeutic and ethically sound relationship with patients.</p> <p>2-3-2-G- Elicit information using effective nonverbal, explanatory, questioning, and writing skills.</p> <p>2-3-2-H- Provide information using effective nonverbal, explanatory, questioning, and writing skills.</p> <p>2-3-2-I- Work effectively with others as a member of a health care team or other professional group.</p>

<p>2-4-E-Demonstrate professionalism behaviors, as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.</p>	<p>2-3-2-J- Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.</p> <p>2-3-2-K- Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, business practices.</p> <p>2-3-2-L-Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities.</p>
<p>2-4-F- Demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively use system resources to provide care that is of optimal value.</p>	<p>2-3-2-M-Work effectively in relevant health care delivery settings and systems including good administrative and time management</p> <p>2-3-2-N- Practice cost-effective health care and resource allocation that does not compromise quality of care.</p> <p>2-3-2-O- Assist patients in dealing with system complexities.</p>
<p>2-4-G- Demonstrate skills of effective time management</p>	<p>2-3-2-M-Work effectively in relevant health care delivery settings and systems including good administrative and time management</p>
<p>2-4-H- Demonstrate skills of self and continuous learning.</p>	<p>2-3-2-A- Perform practice-based improvement activities using a systematic methodology (share in audits and risk management activities and use logbooks).</p>

III - Program matrix

Knowledge and Understanding

Course	Program covered ILOs							
	2/1/A	2/1/B	2/1/C	2/1/D	2/1/E	2/1/F	2/1/G	2/1/H
Course 1 : Forensic chemistry and toxicological analysis	✓				✓	✓	✓	
Course 2 : Clinical pharmacology	✓			✓	✓	✓	✓	✓
Course 3 : Internal Medicine	✓	✓	✓	✓	✓	✓	✓	✓
course 4 : Medico legal responsibility in poisoning and physician faults.	✓	✓		✓	✓	✓	✓	✓
course 5 : General Toxicology		✓	✓	✓	✓	✓	✓	✓
Course 6 : Clinical Toxicology	✓	✓	✓	✓	✓	✓	✓	✓
Course 7 : Intensive care for poisoning cases	✓	✓	✓	✓	✓	✓	✓	✓

Intellectual

Course	Program covered ILOs			
	2/2/A	2/2/B	2/2/C	2/2/D
Course 1 : Forensic chemistry and toxicological analysis	✓	✓	✓	
Course 2 : Clinical pharmacology	✓	✓	✓	✓
Course 3 : Internal Medicine	✓	✓	✓	✓
course 4 : Medico legal responsibility in poisoning and physician faults.	✓	✓	✓	✓
course 5 : General Toxicology	✓	✓	✓	✓
Course 6 : Clinical Toxicology	✓	✓	✓	✓
Course 7 : Intensive care for poisoning cases	✓	✓	✓	✓

Practical Skills (Patient Care)

Course	Program covered ILOs							
	2/3/1/A	2/3/1/B	2/3/1/C	2/3/1/D	2/3/1/E	2/3/1/F	2/3/1/G	2/3/1/H
Course 1 : Forensic chemistry and toxicological analysis			✓	✓	✓			✓
Course 2 : Clinical pharmacology	✓	✓	✓	✓		✓	✓	✓
Course 3 : Internal Medicine	✓	✓	✓	✓	✓	✓	✓	✓
course 4 : Medico legal responsibility in poisoning and physician faults.	✓	✓	✓	✓		✓	✓	✓
course 5 : General Toxicology	✓	✓		✓	✓	✓	✓	✓
Course 6 : Clinical Toxicology	✓	✓	✓	✓	✓	✓	✓	✓
Course 7 : Intensive care for poisoning cases	✓	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program covered ILOs							
	2/3/2/ A	2/3/2/ B	2/3/2/ C	2/3/2/ D	2/3/2/ E	2/3/2/ F	2/3/2/ G	2/3/2/ H
Course 1 : Forensic chemistry and toxicological analysis	✓	✓	✓	✓	✓	✓	✓	✓
Course 2 : Clinical pharmacology	✓	✓	✓	✓	✓	✓	✓	✓
Course 3 : Internal Medicine	✓	✓	✓	✓	✓	✓	✓	✓
course 4 : Medico legal responsibility in poisoning and physician faults.	✓	✓	✓	✓	✓	✓	✓	✓
course 5 : General Toxicology	✓	✓	✓	✓	✓	✓	✓	✓
Course 6 : Clinical Toxicology	✓	✓	✓	✓	✓	✓	✓	✓
Course 7 : Intensive care for poisoning cases	✓	✓	✓	✓	✓	✓	✓	✓

General Skills

Course	Program covered ILOs						
	2/3/2/I	2/3/2/J	2/3/2/K	2/3/2/L	2/3/2/M	2/3/2/N	2/3/2/O
Course 1 : Forensic chemistry and toxicological analysis	✓	✓	✓	✓	✓	✓	✓
Course 2 : Clinical pharmacology	✓	✓	✓	✓	✓	✓	✓
Course 3 : Internal Medicine	✓	✓	✓	✓	✓	✓	✓
course 4 : Medico legal responsibility in poisoning and physician faults.	✓	✓	✓	✓	✓	✓	✓
course 5 : General Toxicology	✓	✓	✓	✓	✓	✓	✓
Course 6 : Clinical Toxicology	✓	✓	✓	✓	✓	✓	✓
Course 7 : Intensive care for poisoning cases	✓	✓	✓	✓	✓	✓	✓

Annex 7,
Additional information:

Name	
Prof	Randa Hussein Abdel-Hady
Prof	Nassef Nageh Zaki
Prof	Abdel-Wahab Abdel-Karim Dawood
Prof	Afaf Mohamed Ahmed Farghaly
Prof	Nahed A Abdel-Hamid
Prof	Wafaa Mohamed Abdel Moneim
Prof	Ragaa Mohamed Abdel-Maaboud
Prof	Hala Mohamed Fathy Ahmed
Prof	Zaghloul Thabet Mohamed
Prof	Hayam Zakaria Thabet
Prof	Saly Yehia Abd-El Hamid
Prof	Aml Ali Mohamed Ali
Prof	Safaa Maher George
Prof	Nagwa Mahmoud Ali Ghandour
Prof	Ghada Ali Farghali Omran
Prof	Heba Atia yassa
Dr	Nora Zeidan
Dr	Doaa Abd El-Rahman
Dr	Eman Salah Shaltout
Dr	Noha Esmael
Dr	Doaa M. Almaz
Dr	Asmaa Hassan

+ Opportunities within the department:

- + Department quality control insurance for completing the program:** Evaluation by the Department head and staff members.
- + Regular assessments.**
- + Log book monitoring.**
- + Recent equipment's and Specialized Units.**

End of the program specification

