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Faculty of Medicine
Forensic Medicine and
Clinical Toxicology Department

Medical Doctorate (M.D.) Degree Program and Courses
Specifications for *Clinical Toxicology*

(According to currently applied Credit point bylaws)

Clinical Toxicology
Faculty of medicine
Assiut University
2022-2023

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M. D. degree of Clinical Toxicology

A. Basic Information

- + **Program Title:** M. D. degree of **Clinical Toxicology**
- + **Nature of the program:** Single.
- + **Responsible Department:** Department of Forensic Medicine& Clinical Toxicology - Faculty of Medicine- Assiut University
- + **Program Director (Head of the Department):**
Prof. Randa Hussein AbdelHady
- + **Coordinator (s):**
Principle coordinator: Prof Dr. Heba A. Yassa
Assistant coordinator: Prof. Dr: Safaa Maher George
- + **Internal evaluators:** Prof. Dr. Nahed AbdelMaksod
- + **External evaluator:** Mona El-Kotb Mousa sharaf (Prof of Forensic Medicine and Clinical Toxicology– Faculty of Medicine- Ain Shams University)
- + **Date of Approval by the Faculty of Medicine Council of Assiut University:** 22-5-2018
- + **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+ 2 Elective courses

B. Professional Information

1- Program aims

- 1/1 To enable candidates to master high level of clinical skills, bedside care skills, in addition to update medical knowledge as well as clinical experience and competence in the area of clinical toxicology
- 1/2 Provide candidates with fundamental knowledge and skills of intensive care medicine as regards; dealing with critically ill poisoned patients, ICU equipment, techniques, indications, contraindications and training skills of different intensive care techniques related to clinical toxicology.
- 1/3 To enable candidates to perform high standard scientific medical research and how to proceed with publication in indexed medical journals.
- 1/4 To enable candidates to describe the basic ethical and medicolegal principles relevant to clinical toxicology.
- 1/5 To enable candidates to have professional careers as a consultant in Egypt but recognized abroad.
- 1/6 To enable candidates to continue self-learning in subspecialties.
- 1/7 To enable candidates to master different research methodology and do their own.

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

2/1 Knowledge and understanding:

- A. Demonstrate in-depth knowledge and understanding of theories, basics and updated biomedical, clinical epidemiological and socio – behavioral science relevant clinical toxicology as well as the evidence – based application of this knowledge to patient care.
- B. Explain basics, methodology, tools and ethics of scientific medical, clinical research.
- C. Mention ethical, medico logical principles and bylaws relevant to his practice in the field of clinical toxicology.
- D. Mention principles and measurements of quality assurance and quality improvement in medical education and in clinical practice of clinical toxicology.
- E. Mention health care system, public health and health policy, issues relevant to clinical toxicology and principles and methods of system – based improvement of patient care in common health problems of the field of clinical toxicology.

2/2 Intellectual outcomes

- A. Apply the basic and clinically supportive sciences which are appropriate to the clinical toxicology related conditions / problem / topics.
- B. Demonstrate an investigatory and analytic thinking “problem – solving “approaches to clinical situation related to clinical toxicology.
- C. Plan research projects.
- D. Write scientific papers.
- E. Participate in clinical risk management as a part of clinical governance.
- F. Plan for quality improvement in the field of medical education and clinical practice in clinical toxicology.
- G. Create / innovate plans, systems, and other issues for improvement of performance in his practice.
- H. Present and defend his / her data in front of a panel of experts.
- I. Formulate management plans and alternative decisions in different situations in the field of clinical toxicology.

2/3 Skills

2/3/1 Practical skills (Patient Care)

Students will be able to:

- A. Provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
p.s. Extensive level means in-depth understanding from basic science to evidence – based clinical application and possession of skills to manage independently all problems in field of practice.
- B. Provide extensive level of patient care for patients with all common diagnoses and for uncomplicated procedures related to clinical toxicology.
- C. Provide extensive level of patient care for non-routine, complicated patients and under increasingly difficult circumstances, while demonstrating compassionate, appropriate and effective care.
- D. Perform diagnostic and therapeutic procedures considered essential in the field of clinical toxicology.
- E. Handles unexpected complications, while demonstrating compassion and sensitivity to patient needs and concerns.
- F. Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families in the clinical toxicology related situations.
- G. Gather essential and accurate information about patients of the clinical toxicology related conditions.
- H. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgment for the clinical toxicology related conditions.
- I. Develop and carry out patient management plans for clinical toxicology.
- J. Counsel and educate patients and their families about clinical toxicology related conditions.

- K. Use information technology to support patient care decisions and patient education in all clinical toxicology situations.
- L. Perform competently all medical and invasive procedures considered essential for the clinical toxicology related conditions / area of practices.
- M. Provide health care services aimed at preventing the clinical toxicology related health problems.
- N. Lead health care professionals, including those from other disciplines, to provide patient-focused care in clinical toxicology related conditions.
- O. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets. (Write and evaluate a consultation note, inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible 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. Demonstrate the competency of continuous evaluation of different types of care provision to patients in the different area of clinical toxicology
- B. Appraise scientific evidence.
- C. Continuously improve patient care based on constant self-evaluation and life-long learning.
- D. Participate in clinical audit and research projects.
- E. Practice skills of evidence-based Medicine (EBM).
- F. Educate and evaluate students, residents and other health professionals.

- G. Design logbooks.
- H. Design clinical guidelines and standard protocols of management.
- I. Appraise evidence from scientific studies related to the patients' health problems.
- J. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies.
- K. Use information technology to manage information, access on-line medical information; for the important topics.

Interpersonal and Communication Skills

- L. Master interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals, including: -
 - Present a case.
 - Write a consultation note.
 - Inform patients of a diagnosis and therapeutic plan completing and maintaining comprehensive.
 - Timely and legible medical records.
 - Teamwork skills.
- M. Create and sustain a therapeutic and ethically sound relationship with patients.
- N. Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.
- O. Work effectively with others as a member or leader of a health care team or other professional group.

Professionalism

- P. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.
- Q. Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.
- R. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities.

Systems-Based Practice

- S. Work effectively in health care delivery settings and systems related to clinical toxicology including good administrative and time management.
- T. Practice cost-effective health care and resource allocation that does not compromise quality of care.
- U. Advocate for quality patient care and assist patients in dealing with system complexities.
- V. Design, monitor and evaluate specification of under and post graduate course and programs.
- W. Act as a chair man for scientific meetings including time management.

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

Academic standards for Medical Doctorate (MD) degree *in clinical toxicology*

Assiut Faculty of Medicine developed MD 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 20/3/2010. 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).
http://www.acgme.org/acWebsite/navPages/nav_Public.asp
2. American College of Medical Toxicology (ACMT) Board Review Course 2014 Syllabus
3. Critical care syllabus (Medical University of South Carolina)

Comparison between program and specialty external reference

| Item | Clinical Toxicology | ACCP Board Review Courses Syllabus 2007 |
|-------------------|---------------------|---|
| Goals | Matched | Matched |
| ILOS | Matched | Matched |
| Duration | 4 -6 years | Different |
| Requirement | Different | Different |
| Program structure | Different | Different |

5- Program Structure

A. Duration of program: 4-6 years

B. Structure of the program:

Total number of credit points: = 420 CP

Master degree: 180 credit point

Didactic #: 37 CP (23.1%), practical 123 (76.9%), total 160 CP

Thesis and researches: 80 CP (33.3%)

First part

Didactic 10 (100%), practical 0 (0 %), total 10 CP

Second part

Didactic 24, (16.3 %), practical 123 (83.7 %), total 147 CP

Elective courses: 3 credit points

#Didactic (lectures, seminars, tutorial)

According to the currently applied bylaws:

Total courses: 160 credit point

Compulsory courses: 157 credit point (98.1%)

Elective courses: 3 credit point (1.9%)

| | Credit point | % from total |
|-----------------------------|--------------|--------------|
| Basic courses | 10 | 4.1% |
| Humanity and social courses | 3 | 1.2% |
| Specialized courses | 147 | 61.3% |
| Others (Computer, ...) | - | 0 |
| Field training | 123 | 51.3% |
| Thesis | 40 | 16.7% |
| 2 published researches | 40 | 16.7% |
| Master degree | 180 | |

C. Program Time Table

Duration of program 4 years divided into

- Part 1

Program-related basic science courses

Program-related essential courses

- Medical statistic
- Research methodology
- Medicolegal Aspects and Ethics in Medical Practice and Scientific Research

Students are allowed to sit the exams of these courses after 6 months from applying to the M D degree.

Students are allowed to sit the exams of the remaining basic science courses after 12 months from applying to the MD degree.

Thesis and 2 published researches

For the M D thesis;

MD thesis subject should be officially registered within 1 year from application to the MD degree,

Discussion and acceptance of the thesis should not be set before 24 months from registering the M D subject;

It could be discussed and accepted either before or after passing the second part of examination

- Part 2

Program –related speciality courses and ILOs

Students are not allowed to sit the exams of these courses before 4 years from applying to the MD degree.

Two elective courses can be set during either the 1st or 2nd parts.

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

Total degrees 1700 marks.

500 marks for first part

1200 for second part

Written exam 40% - 70%.

Clinical and oral exams 30% - 60%.

D. Curriculum Structure : (Courses) :

✚ Levels and courses of the program:

| Courses and student work load list | Course Code | Credit points | | |
|--|-------------|---|----------|-------|
| | | didactic # | training | total |
| First Part | | | | |
| Basic science courses (10 CP) | | | | |
| Course 1: Medical Statistics | FAC309A | 1 | - | 1 |
| Course 2: Research Methodology | FAC309B | 1 | - | 1 |
| Course 3: Medicolegal Aspects & Ethics in Medical Practice and Scientific Research | FAC310C | 1 | - | 1 |
| Course 4: Planning of Toxicological Studies. | CLT310A | 2.5 | 0.5 | 3 |
| Course 5: Intensive Care for Poisoning Cases. | CLT329 | 0.5 | 1 | 1.5 |
| Course 6: Toxicological and Biochemical Analysis. | CLT310B | 2 | 0.5 | 2.5 |
| Elective courses* | | 3 CP | | |
| - Elective course 1 | | 1.5 | | 1.5 |
| - Elective course 2 | | 1.5 | | 1.5 |
| Thesis | | 40 CP | | |
| Published researches** | | 40 CP | | |
| Second Part | | Specialized courses 24 CP Speciality Clinical Work (log Book) 123 CP | | |
| Speciality Courses | | | | |
| Course 7 " Advanced Clinical toxicology" | CLT310C | 24 | | 24 |
| Speciality Clinical Work (123 CP) | CLT310C | | 123 | 123 |
| Total of second part | | 24 | 123 | 147 |

#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#:

- Advanced medical statistics.
- Evidence based medicine.
- Advanced infection control.
- Quality assurance of medical education.
- Quality assurance of clinical practice.
- -Hospital management

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

3. Thesis / Researches:

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

** Another 40 points are appointed to acceptance or publication of one research from the thesis in international indexed medical journals or publication of 2 researches from the thesis in local specialized medical journals.

* Course 7 " Advanced Clinical Toxicology"

| Units' Titles' list | % from total | Level (Year) | Core Credit points | | |
|--|--------------|--------------------|--------------------|------------|------------|
| | | | Didactic | training | Total |
| 1) Unit 1 " Advanced General Toxicology and First Aid of Poisoning." | 25% | 1,2&3 | 6 | 31 | 37 |
| 2) Unit 2 " Advanced Special Toxicology." | 50% | 2&3&4 | 12 | 61.5 | 73.5 |
| 3) Unit 3: Advanced Studies in Dependence and Illicit Substances | 25% | 3&4 | 6 | 30.5 | 36.5 |
| Total No. of Units: | 3 | 1,2,3&4 | 24 | 123 | 147 |

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

Annex 6 II: Program Matrix

7-Admission requirements

+ Admission Requirements (prerequisites) if any:

I. General Requirements:

- Master degree in the Clinical Toxicology

II. Specific Requirements:

- Fluent in English (study language)
- Full time study at the department.

VACATIONS AND STUDY LEAVE

The current departmental policy is to give working assistant lecture 3 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 (Medical statistic, Research methodology and Medicolegal Aspects and Ethics in Medical Practice and Scientific Research) could be set at 6 months from registering to the MD degree.

+ Students are allowed to sit the exams of the remaining essential courses of the first part after 12 months from applying to the MD degree.

+ Examination of the second part cannot be set before 4 years from registering to the degree.

+ Discussion of the MD thesis could be set after 2 years from officially registering the MD subject, either before or after setting the second part exams.

+ The minimum duration of the program is 4 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 MD thesis.
4. Acceptance or publication of one research from the thesis in international indexed medical journals or publication of 2 researches from the thesis in local specialized medical journals.

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 | | Degrees | | | |
|---|--------------------|----------------|--------------|----------------------------------|--------------|
| Courses | Course Code | Written Exam | Oral * | Practical/ Clinical Exam | Total |
| First Part | | | | | |
| Basic science Courses: | | | | | |
| Course 1; Medical Statistics | FAC309A | 35 | 15 | - | 50 |
| Course 2; Research Methodology | FAC309B | 35 | 15 | - | 50 |
| Course 3; Medico legal Aspects & Ethics in Medical Practice and Scientific Research | FAC310C | 35 | 15 | - | 50 |
| Course 4; Planning of Toxicological studies | CLT310A | 100 | 25 | 25 | 150 |
| Course 5; Intensive care for poisoning cases | CLT329 | 30 | 20 | 25 | 75 |
| Course 6; Toxicology and Biochemical Analysis | CLT310B | 60 | 30 | 35 | 125 |
| Total of the first part | | | | | 500 |
| Second Part | | | | | |
| | Course code | written | Oral* | Practical / Clinical Exam | Total |
| Speciality Courses | | | | | |
| "Advanced Clinical Toxicology" "(Unit 1-3)/paper time | CLT310C | | | | 1200 |
| Paper 1 (Unit1; 3hours) | | 150 | 300 | 300 | |
| Paper 2 (Unit2; 3hours) | | 150 | | | |
| Paper 3 (Unit2; 3hours) | | 150 | | | |
| Paper 4 (Unit3; 3hours) | | 150 | | | |
| Total of The second part | | 600 | 300 | 300 | 1200 |
| Elective course 1 | | 50 | | 50 | 100 |
| Elective course 2 | | 50 | | 50 | 100 |

* 25% of the oral exam for assessment of logbook.

*Advanced Clinical Toxicology Course and weighting of units

| Units' (Module)Titles' list | % from total Marks | Degrees | | | |
|--|--------------------|--------------|-------------|---------------------------|-------------|
| | | Written Exam | Oral Exam * | Practical / Clinical Exam | Total |
| 1) Unit (Module) 1 "Advanced General Toxicology and First aid of Poisoning." | 25% | 150 | 75 | 75 | 270 |
| 2) Unit (Module)2 " Advanced Special toxicology " | 50% | 300 | 150 | 150 | 540 |
| 3) Unit (Module)3 " Advanced Study in Dependence and Illicit Substances " | 25% | 150 | 75 | 75 | 270 |
| Total No. of Units (Modules): | 3 | 600 | 300 | 300 | 1200 |

* 25% of the oral exam for assessment of logbook

500 marks for first part

1200 for second part

Written exam 50% (600 marks)

Clinical and oral exams 50% (600 marks)

Elective courses 200

Examination system:

➤ First part:

- Written exam 2 hours in Medical Statistics and Research Methodology + oral examination
- Written exam 1 hours in Medico Legal Aspects and Ethics in Medical Practice and Scientific Research + oral examination
- Written exam 2 hours in Planning of Toxicological Studies + (Oral exam) Attendance/ Assignments + Practical exam
- Written exam 1 hours in Intensive care for Poisoning cases and General Management of mass Poisoning + (Oral exam) Attendance/ Assignments + Practical exam
- Written exam 2 hours in Toxicological and Biochemical Analysis + (Oral exam) Attendance/ Assignments + Practical exam

➤ **Second part:**

- Written exam four papers (3 hours for each in advanced clinical toxicology + Oral exam+ Clinical/Practical exam)

➤ **Elective courses**

- Written exam one paper 1 hour in Elective course 1 + Oral & Practical exam
- Written exam one paper 1 hour in Elective course 2 + Oral & Practical exam

10-Program evaluation

| By whom | Method | Sample |
|---|---|---------------|
| Quality Assurance Unit | Reports Field visits | 1 |
| External Evaluator (s): According to department council | Reports Field visits | 1 |
| External Examiner (s): According to department council | | 2 |
| Stakeholders | Reports Field visits Questionnaires | 19 |
| Senior students | Questionnaires | 9 |
| Alumni | Questionnaires | 3 |

#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 Heba Attia Yass | | |
| Head of the Responsible Department (Program Academic Director): | Prof. Randa Hussein Abdel Hady | | |

Annex 1, Specifications for Courses / Modules

Annex 1: specifications for courses

First Part

- 1) Course 1: Medical Statistics
- 2) Course 2: Research Methodology
- 3) Course 3: Medico legal Aspects and Ethics in Medical Practice and Scientific Research
- 4) Course 4: Planning of Toxicological Studies.
- 5) Course 5: Intensive Care for Poisoning Cases.
- Course 6: Toxicological and Biochemical Analysis

Course 1: Medical statistics

Name of department: Public Health and Community Medicine

Faculty of medicine

Assiut University

2022-2023

1. Course data

- + Course Title: Medical statistics
- + Course code: FAC309A
- + Specialty: offered to all clinical and academic specialties
- + Number of credit points: 1 credit point
- + Department (s) delivering the course: Pubic Health and Community Medicine
- + Coordinator (s):
 - Course coordinator: Prof. Farag Mohammed Moftah
 - Assistant coordinator (s):
Prof. Medhat Araby Khalil Saleh
- + Date last reviewed: January -2022
- + Requirements (pre-requisites) if any:
 - Completed Master degree in any of the academic or clinical departments of Medicine.

2. Course Aims

Enable graduate students to use statistical principles to improve their professional work and develop the concept of critical interpretation of data

3. Intended learning outcomes (ILOs): To be able to use statistical principals to manage data

A knowledge and understanding

| ILOS | Methods of teaching/ learning | Methods of Evaluation |
|--|-------------------------------|-----------------------|
| A. List the types of variables | Lecture and discussion | Written examination |
| B. Identify the methods of data collection | Lecture and discussion | Written examination |
| C. Describe the different sampling strategies | Lecture and discussion | Written examination |
| D. Identify types of tabular and graphic presentation of data | Lecture and discussion | Written examination |
| E. Identify measures of central tendency and dispersion | Lecture and discussion | Written examination |
| F. Identify the characters of normal distribution curve. | Lecture and discussion | Written examination |
| G. Detect the difference between parametric and non-parametric tests | Lecture and discussion | Written examination |
| H. Identify the concepts of correlation and regression | Lecture and discussion | Written examination |

B. intellectual

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|-------------------------------|-----------------------|
| A. Describe the normal curves. | Lecture& Discussions | Written examination |
| B. Describe and summarize data | Lecture& Discussions | Written examination |
| C. Select the proper test of significance | Lecture& Discussions | Written examination |
| D. Interpret the proper test of significance | Lecture& Discussions | Written examination |
| E. Describe the difference between parametric and non-parametric tests | Lecture& Discussions | Written examination |

C. Practical skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|-------------------------------|--------------------------|
| A. Design data entry files. | Tutorial on SPSS | Assignments SPSS exam |
| B. Validate data entry. | Tutorial on SPSS | Assignments SPSS exam |
| C. Manage data files. | Tutorial on SPSS | Assignments SPSS exam |
| D. Construct tables and graphs. | Tutorial on SPSS | Assignments SPSS exam |
| E. Calculate measures of central tendency and dispersion. | Tutorial on SPSS | Assignments SPSS exam |
| F. Select, apply and interpret the proper test of significance. | Tutorial on SPSS | Assignments SPSS exam |

D general skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|----------------------------------|---------------------------------|
| A. Appraise scientific evidence | Discussions | Research assignment |
| B. Use information technology to manage information, access on-line medical information; for the important topics. | tutorial | Research and audits' assignment |

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

Time Schedule: First Part

| Topic | Covered ILOs | | | |
|--|----------------|-------------------|--------------------------|------------------------|
| | Knowledge A | Intellectual B | Practical skills C | General Skills D |
| Introduction | A-F | A-D | - | A&B |
| Tables and graphics | D | A-D | - | A&B |
| Sampling | C | - | - | A&B |
| Methodology of data collection | B | - | - | A&B |
| Type of variables | A | - | - | A&B |
| Proportion test& Chi-square test | E,F | C&D | - | A&B |
| Student T test& Paired T test | E,F | C&D | F | A&B |
| ANOVA test | E,F | C&D | F | A&B |
| Non parametric tests | E,F | C&D | F | A&B |
| Discrimination analysis factor analysis | E,F | C&D | - | A&B |
| SPSS Introduction | A-F | A-D | - | A&B |
| Data entry and cleaning of data | A | A-D | A-C | A&B |
| Transforming of variables | A | A&B | A-C | A&B |
| Descriptive statistics | D | A-D | D&E | A&B |
| Graphic presentation | D | A&B | D | A&B |
| Chi square and interpretation of results | E,F | C&D | F | A&B |
| Correlation Regression | E,F | C&D | F | A&B |
| Multiple and logistic Regression | E,F | C&D | F | A&B |

5. Course Methods of teaching/learning

1. Lectures
2. Assignments
3. Discussions
4. Exercises
5. Tutorial on SPSS v.16

6. Course assessment methods:

i. Assessment tools:

1. Attendance and active participation
2. Assignment
3. Practical SPSS examination
4. Written exam

ii. **Time schedule:** After 6 months from applying to the M D degree.

iii. **Marks:** 50 (35 for written exam and 15 for practical exam).

7. List of references

i. Lectures notes

Department lecture notes

ii. Essential books

- Medical Statistics: Book by Ramakrishna HK 2016
- Janet Peacock and Philip Peacock. Oxford Handbook of Medical Statistics (second edition.) Publisher: Oxford University Press, Print Publication Date: Nov 2010 Print ISBN-13: 9780199551286, Published online: Jun 2011. DOI: 10.1093/med/9780199551286.001.0001
- Leslie E. Daly MSc, PhD, Hon MFPHM,, Geoffrey J. Bourke MA, MD, FRCPI, FFPHM, FFPHMI, Interpretation and Uses of Medical Statistics, Fifth Edition, First published:1 January 2000, Print ISBN:9780632047635 |Online ISBN:9780470696750 |DOI:10.1002/9780470696750
- Marcello Pagano, Kimberlee Gauvreau: Principles of Biostatistics second edition published in 2000 by Brooks/Cole and then Cengage Learning. CRC Press, Feb 19, 2018 - Mathematics - 584 pages.

iii- Recommended books

- Ji-Qian Fang (Sun Yat-Sen University, China) Handbook of Medical Statistics: <https://doi.org/10.1142/10259> | September 2017. Pages: 852
- Robert H. Riffenburgh: Statistics in Medicine 4th Edition (2020). Evidence Based Medicine How to practice and teach EBM.
- Discovering Statistics Using IBM SPSS Book by Andy Field, 2013.

iii. Periodicals, Web sites, etc

iv. **Periodicals , etc** Statistics in Medicine - Wiley Online Library

v. **Web sites** <https://www.phc.ox.ac.uk/research/medical-statistics>

8. Signatures

| | |
|---|---|
| Course Coordinator: - Farag Mohammed Moftah | Head of the Department: - Prof. Eman Morsy Mohamed |
| Date: 10-1-2022 | Date: 10-1-2022 |
| Associated Coordinator: Prof. Medhat Araby Khalil Saleh | |
| Date: 10-1-2022 | |

Course 2: Research Methodology

Name of department: *Public Health and Community Medicine* Faculty of medicine

Assiut University

2021-2022

1. Course data

- + Course Title: Research methodology
- + Course code: FAC309B
- + Specialty: Offered to all clinical and academic specialties
- + Number of credit points: 1 credit point
- + Department (s) delivering the course: Department of public health
- + Coordinator (s):
 - Course coordinator: Prof. Mahmoud Attia
 - Assistant coordinator (s): Prof. Ekram Mohamed
 - Prof. Medhat Araby Khalil
- + Date last reviewed: January 2022
- + Requirements (prerequisites) if any:
 - Completed Master degree in any of the academic or clinical departments of Medicine.

2. Course Aims

To provide graduate students with the skills of:

- planning and implementing sound research
- writing a scientific research proposal

3. Intended learning outcomes (ILOs)

A knowledge and understanding

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|---|---|
| A. Explain differences between different study designs. | Lecture and discussion Practical sessions Workshops | Written exam Log book assignments Practical exam |
| B. Identify sources and types of bias in research. | Lecture and discussion Practical sessions | Written exam Log book assignments Practical exam |
| C. Identify methods of data collection. | Lecture and discussion Practical sessions | Written exam Log book assignments |
| D. Select and design valid measurement tools for research. | Lecture and discussion Practical sessions Workshops | Written exam Log book assignments Practical exam |
| E. Explain ethical issues in conducting research on human subjects. | Lecture and discussion Practical sessions Workshops | Written exam Log book assignments |
| F. List the steps involved in proposal writing. | Lecture and discussion Practical sessions Workshops | Written exam Log book assignments Practical exam |
| G. Identify a research problem within a conceptual framework. | Lecture Discussion | Written exam Log book assignments |

| | | |
|--|---|--------------------------------------|
| | | Practical exam |
| H. Use the web sources to do a literature search | Practical tutorial on web | Log book assignment |
| I. Describe the rules of authorship in scientific writing. | Lecture and discussion Practical sessions Workshops | Written exam Log book assignments |
| J. Select the appropriate study design for the research question. | Lecture Practical sessions | Written exam Practical exam |
| K. Minimize bias in designing research. | Lecture | Written exam |
| L. Screening & theoretical background | Lectures | Written exam Practical exam |
| M. Mention the basic ethics for conducting a research and medicolegal principles relevant to data confidentiality. | lectures seminar | Written exam Practical exam |

B. intellectual

| Competency and Skills | Methods of teaching/ learning | Methods of Evaluation |
|--|----------------------------------|--------------------------------------|
| A- Apply basic science & knowledge for appraising scientific literature. | Discussions & seminars | Written exam Practical exam |
| B- Design research and present study data, in seminars. | lecture seminar | log book assignments |
| C- Design suitable epidemiological study. | lecture seminar | log book assignments |
| D- Design strategies for resolving ethical concerns in research, law, and regulations. | lecture Workshops | Written exam log book assignments |
| E- Apply coherently synthesize ideas and integrate lateral and vertical thinking. | lecture Workshops | log book assignments |
| F- Evaluate screening tests and interpreting their uses in different population. | lecture | Written exam Practical exam |

C. Practical skills

| Competency and Skills | Methods of teaching/ learning | Methods of Evaluation |
|---|-------------------------------|---|
| A- Conduct epidemiological studies, screening and surveys. | lectures seminar | written exam log book assignments |
| B- Identify steps required in fielding the study. | Lecture | Assignments Written exam |
| C- Managing data collection team. | lectures seminar | log book assignments |
| D- Identify steps required for calculation sensitivity, specificity, positive predictive value, negative predictive value, accuracy of a screening test. | Lecture Practical sessions | Assignments Written exam Practical exam |
| E- Be able to define and apply the epidemiologic criteria of causality and be able to distinguish between a measure of association and evidence of causality. | Lecture Practical sessions | Assignments Written exam Practical exam |
| F- Synthesize information from multiple sources for research writing and the ability to perform paper critique . | Lecture Practical sessions | Assignments Written exam Practical exam |
| G- Identify bias and confounding in epidemiological study designs, their types and ways to control them in various types of biases. | Lecture Practical sessions | Assignments Written exam Practical exam |

D General skills
Practice-Based Learning and Improvement

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|--|------------------------------|
| A- Scientific paper and proposal writing skills: be able to write an introduction, objectives and the methodological section. | Tutorial | Written examination |
| B- Learn authorship ethical rules. | Tutorial | Written examination |
| C- Perform practice-based improvement activities using a systematic methodology (audit, logbook, critical appraisal) | - Lectures - Practical sessions - Discussion - Readings | critical appraisal |
| D- Appraise evidence from scientific studies(journal club) | - Lectures - Practical sessions - Discussion - Readings | critical appraisal |
| E- Conduct epidemiological studies, screening and surveys. | - Lectures - Practical sessions - Discussion - Readings | attendance and participation |
| F- Facilitate training of junior students and other health care professionals in different screening activities. | Field work Participation in projects | attendance and participation |

Interpersonal and Communication Skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|---|----------------------------------|
| G- Maintain ethically sound relationship with community members. | - Lectures -Practical sessions - Discussion - Readings | Written exams |
| H- Provide information using effective nonverbal, explanatory, questioning, and writing skills. | - Lectures -Practical sessions - Discussion - Readings | Written exams Practical exams |
| I- Present results of researches in seminars. | - Lectures -Practical sessions - Discussion - Readings | Log book assignments |

Professionalism

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|--|----------------------------------|
| J- Demonstrate respect, compassion, and integrity to the needs of society. | - Lectures - Discussion - Readings | Written exams |
| K- Manage potential conflicts of interest encountered by practitioners, researchers, and organizations. | - Lectures - Discussion - Readings | Written exams |
| L- Design strategies for resolving ethical concerns in research, law, and regulations. | Lectures - Discussion - Readings | Written exams Practical exams |
| M- Demonstrate ways to control for confounding in the analysis phase of a study | Lectures - Discussion - Readings | Written exams Practical exams |
| N- Demonstrate a commitment to ethical principles including confidentiality of participants' information and informed consent. | Lectures - Discussion - Readings | Written exams |
| O- Assess ethical considerations in developing communications and promotional initiatives. | - Lectures - Discussion - Readings | Written exams |

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

Time Schedule: First Part

| Topic | Covered ILOs | | | |
|--|----------------|-------------------|-----------------------|---------------------|
| | Knowledge A | Intellectual B | Practical skills C | General Skills D |
| Over view on research conduction and research ethics | A&E | A-D | A-C | C-G, I,L&M-O |
| How to write a research proposal | F,I | E | F | A-C&H |
| Observational study design | A& D | B & C | D | E & F |
| Experimental study design | A& D | B & C | B | E & F |
| Evaluation of diagnostic tests (Screening) | L | A | B& E | F |
| Systematic reviews and meta analysis | G, H & M | E& F | F | C, D |
| Confounding, bias & effect modification | B & K | D | E & G | M |

5. Course Methods of teaching/learning:

1. Lectures
2. Assignments
3. Discussion
4. Exercises

6. Course assessment methods:

i. Assessment tools:

1. Attendance and participation
2. Log book assignments
3. Written examination
4. Practical examination

ii. Time schedule: After 6 months from applying to the M D degree.

iii. Marks: 50 (35 for written exam and 15 for practical exam).

7. List of references

i. Lectures notes

- Department lecture notes

ii. Essential books

- Research Design: Qualitative, Quantitative and Mixed Methods Approaches 4th Edition by John W. Creswell SAGE Publications, Inc; 4th edition (January 1, 2014)
- Research methodology: A step – by – step Guide for Beginners. Ranjit Kumar, 2020. Second edition <https://books.google.com.eg/books?>
- Medical Research Essentials Rania Esteitie, McGraw Hill Professional, third edition, Feb 5, 2014 - Medical - 104 pages
- Research Methodology in the Medical and Biological Sciences Petter Laake, Haakon Breien Benestad, Bjorn R. Reino Olsen, 4th edition , Academic Press, Nov 5, 2007 - Science - 512 pages

iv. Recommended books

- Research Methods in Education 7th Edition, by Louis Cohen, Lawrence Manion, Keith Morrison Publisher: Routledge; (April 22, 2011) www.routledge.com/textbooks/cohen7e.
- Research Methodology: A Practical and Scientific Approach Vinayak Bairagi, Mousami V. Munot · 2019, Research Methodology: A Practical and Scientific Approach - Google Books
- Evidence Based Medicine How to practice and teach EBM. David Sachett, Sharon E. Straus, W. Scott Richardson , William Rosenberg R. Brain Haynes
- Dissertation workshop open courseware JHSPH

8. Signatures

| | |
|---|--|
| Course Coordinator: Prof. Mahmoud Attia | Head of the Department: Prof. Eman Morsy Mohamed |
| Date: 10-1-2022 | Date: 10-1-2022 |

Course 3: Medicolegal Aspects and Ethics in Medical Practice and Scientific Research

Name of department:

Forensic medicine and clinical toxicology

Faculty of medicine

Assiut University

2022-2023

1. Course data

- + Course Title: **Medicolegal Aspects and Ethics in Medical Practice and Scientific Research**
- + Course code: **FAC310C**
- + Specialty: ***General medicine, Special medicine, Pediatrics, Public health, Oncology, Rheumatology and Forensic Medicine (1st part).***
- + Number of credit points: **1 credit point**
- + Department (s) delivering the course: **Forensic Medicine and Clinical Toxicology**

- + Coordinator (s):
 - Course coordinator:
Prof. Ghada omeran&Prof. Safaa Maher Goerge

 - Assistant coordinator (s) Assist.
Prof. Amal Ali.Mohammed

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

- + Requirements (prerequisites) if any :
 - **Completed Master degree.**

2. Course Aims

To describe the basic ethical and medicolegal principles and bylaws relevant to practice in the field of General medicine, Special medicine, Pediatrics, Public health, Oncology and Rheumatology

3. Intended learning outcomes (ILOs):

A knowledge and understanding

| Competency and Skills | Methods of teaching/ learning | Methods of Evaluation |
|--|-------------------------------|-----------------------|
| A. Mention principals of Taking consent. | Lecture and discussion | Oral &Written exam |
| B. Mention principals of Writing a death certificate | Lecture and discussion | Oral &Written exam |
| C. Mention principals of diagnosing death. | Lecture and discussion | Oral &Written exam |
| D. Mention principals of writing toxicological reports. | Lecture and discussion | Oral &Written exam |
| E. Explain principals of medical reports. | Lecture and discussion | Oral &Written exam |
| F. List indications and principals of induced emesis, gastric lavage and samples collection. | Lecture and discussion | Oral &Written exam |

B. intellectual

| Competency and Skills | Methods of teaching/ learning | Methods of Evaluation |
|--|-------------------------------|-----------------------|
| A. Present case , seminars in death certificate | Lecture and discussion | Oral &Written exam |
| B. Present case, seminars in toxicological cases | Lecture and discussion | Oral &Written exam |

C. Practical skills

| Competency and Skills | Methods of teaching/ learning | Methods of Evaluation |
|---|-------------------------------|--|
| A. Identify medical ethics and ethics in research. | Lecture and discussion | Reading Discussion |
| B. Prepare and write consent. | Lecture and discussion | Reading Discussion |
| C. Identify medical responsibilities. | Lecture and discussion | Reading Discussion |
| D. Write death certificate. | Lecture and discussion | Reading Discussion and active participation |
| E. Deal with a case of Suspicious death | Lecture and discussion | Reading Discussion and active participation |
| F. Perform gastric lavage, induce emesis, and obtain samples. | | |
| G. Write medical and toxicological reports | Lecture and discussion | Reading Discussion and active participation |
| H. Develop and carry out patient | | |

| | | |
|--|--|--|
| management plans for Euthanaesia, and Organ Transplantation | | |
| I. Counsel patients and their families about specialty related conditions including Permanent infirmities, Euthanasia, and Organ Transplantation | | |

D general skills

D general skills

| Competency and Skills | Methods of teaching/ learning | Methods of Evaluation |
|---|--------------------------------------|------------------------------|
| A. Present a case. | Lecture and discussion | Global rating logbook |
| B. Write a consultation note | Lecture and discussion | Global rating logbook |
| C. Inform patients and maintaining comprehensive. | Lecture and discussion | Global rating logbook |
| D. Make timely and legible medical records | Lecture and discussion | Global rating logbook |
| E. Acquire the teamwork skills | Lecture and discussion | Global rating logbook |

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

Time Schedule: First Part

| Topic | Covered ILOs | | | |
|---|----------------|-------------------|-----------------------|---------------------|
| | Knowledge A | Intellectual B | Practical skills C | General Skills D |
| Suspicious death. Death and death certificate. | B,C | A | D,E | A |
| 1. Supportive measures | A | | G | A,D,E |
| 2. Toxicological reports | D,F | B | G,F | A,E |
| 3. Ethics in research. | A | | A | |
| 4. Medical ethics. | E | | A,B,C,H,I | B,C,D |

5. Course Methods of teaching/learning:

1. Lectures.
2. Discussions.
3. Exercises.

6. Course assessment methods:

i. Assessment tools:

1. Written examination.
2. Attendance and active participation.
3. Oral examination.

ii. **Time schedule:** After 6 months from applying to the M D degree.

iii. **Marks:** 50 (35 for written exam and 15 for oral exam).

7. List of references

i. Lectures notes

- Course notes.
- Staff members print out of lectures and/or CD copies.

ii. Essential books

- Ballantyne B., Marrs T. and Syversen T.(1999):General and Applied Toxicology.2nd edition. MACMILLAN REFERENCE LTD.UK.
- Bernard Knight and Pekka Saukko (2004): Knight Forensic Pathology. Hodder Arnold press

iii. Recommended books

- Klassen D. (2001): Casarettand Doull s. Toxicology the basic science of poisons. McGrow. Hill press medical publishing division New York

iv. Journal and web site

- Journals of all Egyptian Universities of Forensic Medicine and Clinical Toxicology.
- All International Journals of Forensic Medicine and Clinical Toxicology which available in the university network at www.sciencedirect.com. As :
Forensic Science International Journal.
Toxicology Letter.

8. Signatures

| | |
|---|--|
| <p>- Course Coordinator: Prof. Ghada Omeran Prof. Safaa maher goerge</p> | <p>- Head of the Department: Prof. Randa Hussein Abdel Hady</p> |
| <p>Date: 4-2022</p> | <p>Date: 4-2022</p> |

Course 4: Planning of Toxicological Studies

Name of department: Forensic Medicine and Clinical Toxicology

Faculty of medicine

Assiut University

2022-2023

1. Course data

- + course Title: **Planning of Toxicological Studies**
- + course code: CLT310A
- + Speciality Clinical Toxicology
- + Number of credit points: 3 credit point; for didactic 2.5CP (83.3%) and training 0.5 CP (16.7%).
- + Department (s) delivering the course: Department of Forensic Medicine and Clinical Toxicology - Faculty of Medicine- Assiut- Egypt.
- + Coordinator (s): Staff members of *Forensic Medicine and Clinical Toxicology* as annually approved by department council
- + Date last reviewed: April 2022.
- + Requirements (prerequisites) if any:
 - None
- + Requirements from the students to achieve unit ILOs are clarified in the joining log book.

2. Course Aims

To acquire in-depth background necessary for designing toxicological studies 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> |
|---|---|--|
| <p>A. Illustrate the following principles of:</p> <ul style="list-style-type: none"> • Types of studies and their design • The right animal for certain type of study and its duration to take toxins. • Administration of toxins and how to estimate substance toxicity • Collection of Toxicological samples for hematological, and biochemical studies • How to collect organs for pathological studies. • Teratogenic effects of some toxins and how to make design. • Carcinogenic effects of some toxins and how to estimate it. • Quality assurance in toxicological studies. • Occupational hazards in toxicology labs | <p>-Didactic (lectures, seminars, tutorial)</p> | <p>- Written and oral examination - Log book</p> |
| <p>B. Describe details of:</p> <ul style="list-style-type: none"> • Biochemical principles of toxins and how to induce their toxicity • Hematological principles of toxins and how to induce their toxicity • Pharmacological principles of toxins and how to induce their toxicity • physiological principles of toxins and how to induce their toxicity <p>-Pathological principles of organs affected by toxins, and</p> | <p>-Didactic (lectures, seminars, tutorial)</p> | <p>- Written and oral examination - Log book</p> |

| | | |
|--|--|--|
| <p>the most affected organ for each type of toxins</p> <p>-The best organs to be taken as a sample to estimate the effects of toxins and how to select</p> <p>-Type and most appropriate stain for each type of organs and how to select to demonstrate the effects of this types of toxins.</p> | | |
|--|--|--|

B- Intellectual outcomes

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|--|--|
| A. Apply the basic sciences, which are appropriate to design different toxicological studies. | -Didactic (lectures, seminars, tutorial) | -Written, and oral examination - Log book |
| B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to design different toxicological studies | | |
| C. Plan research projects. | | |
| D. Write scientific papers | | |

C- Practical skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|--|--|
| <p>A. Perform the basic lab skills essential to the course including:</p> <ul style="list-style-type: none"> -Hematological tests -Pathological stains <p>B. Design a toxicological study including the following:</p> <ul style="list-style-type: none"> - Experimental acute and subacute study - Experimental chronic study - Experimental sub chronic study - Antidote studies - Carcinogenic studies - Teratogenic studies | <p>-Lectures</p> <p>-Books</p> <p>-journals</p> <p>-Tutorials</p> <p>- Seminars</p> <p>-Case study</p> | <p>Written, oral practical examination</p> <p>Log Book</p> |

D-General Skills

Practice-Based Learning and Improvement

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|---|-----------------------|
| A. Use information technology to manage information, access on-line medical information; and support their own education | -Observation and supervision -Written and oral communication | Oral exam Logbook |

Interpersonal and Communication Skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|---|---------------------------------------|
| B. Write a report in common condition mentioned above. | -Clinical round -Seminars -Lectures | -Log book -Chick list Oral exam |

Professionalism

| ILOs | Methods of teaching/ Learning | Methods of Evaluation |
|--|---|-----------------------|
| C. Demonstrate a commitment to ethical principles. | - Observation and supervision Written & oral communication | Logbook Oral Exam |

Systems-Based Practice

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|--|-----------------------|
| D. Work effectively in different health care delivery settings and systems. | -Observation -Senior staff experience | -360o global rating |

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

Time Schedule: First Part

| Topic | Covered ILOs | | | |
|---|--------------|--------------|-----------------|----------------|
| | Knowledge | Intellectual | Practical skill | General Skills |
| <ul style="list-style-type: none"> • Types of studies and their design • The right animal for certain type of study and its duration to take toxins. • administration of toxins and how to estimate substance toxicity • Collection of Toxicological samples for hematological, and biochemical studies • How to select and collect organs for pathological studies. • Definition of teratogenic effects of some toxins and how to make design. • Carcinogenic effects of some toxins and how to estimate it. • Quality assurance in toxicological studies. • Occupational hazards in toxicology labs. | A | A-C | A -B | A-D |
| <ul style="list-style-type: none"> • Physiologic Principles" of different toxicological drugs". | B | A-D | A -D | A-D |

| | | | | |
|---|--|--|--|--|
| <ul style="list-style-type: none"> • Hematological principles" of different toxicological drugs". • Biochemical principles" of different toxicological drugs". • Carcinogenic principles" of different toxicological drugs". • Teratogenic principles" of different toxicological drugs". • Pharmacological principles" of different toxicological drugs". • Pharmacological principles of antidotes and how to antagonize the effects of toxins. | | | | |
|---|--|--|--|--|

5. Unit methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Observation and supervision
3. Written & oral communication
4. Senior staff experience

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

1. Extra didactic (lectures, seminars, tutorial)

7. Unit assessment methods:

i. Assessment tools:

1. Written and oral examination
2. Practical exam

3. Log book

ii. **Time schedule:** After 12 months from applying to the M D degree.

iii. **Marks:** 150 (100 written + 25 oral + 25 practical and clinical)

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

Ballantyne B., Marrs T. and Syversen T. (2009): General and Applied Toxicology.3rd edition. MACMILLAN REFERENCE LTD.UK.

iii. Recommended books:

Postmortem toxicology of the abused drug ,2007

iv. Periodicals, Web sites, ... etc

- Journals of all Egyptian Universities of Forensic Medicine and Clinical Toxicology.
- All International Journals of Forensic Medicine and Clinical Toxicology which available in the university network at www.sciencedirect.com.
- Toxicology Letter.

v. Others

9. Signatures

| | |
|---|--|
| Course Coordinator: Prof. Safaa M. George Dr. Heba A. Yassa Dr. Nora Zidan | Head of the Department: Prof. dr. Randa Hussein |
| Date: | Date: |

Course 5: Intensive Care for Poisoning Cases

- **Name of department: Forensic Medicine and Clinical Toxicology**
Faculty of medicine
Assiut University
2018-1019

1. Course data

- + course Title: **Intensive Care for Poisoning Cases**
- + Course code: **CLT329**
- + Speciality **clinical Toxicology**
- + Number of credit points: **1.5 credit point (100%); 0.5CP for didactics (33.3%) and 1CP (66.7%) for training.**
- + Department (s) delivering the course: **Department of Anesthesia and Intensive Care and department of Forensic Medicine and Clinical Toxicology- Faculty of Medicine- Assiut- EGYPT**
- + Coordinator (s): **Staff members of Anesthesia and Intensive Care department and of Forensic Medicine clinical toxicology Department as annually approved by both departments councils**
- + Date last reviewed: **April 2022.**
- + Requirements (prerequisites) if any:
 - **None**
- + Requirements from the students to achieve unit ILOs are clarified in **the joining log book.**

2. Course Aims

2/1-To provide candidates with enough general skills related to emergency clinical evaluation and management of an acutely intoxicated patient, and in immediate general and specific emergency management.

2/2-To enable MD students to master high level of clinical skills, in addition to update and advanced medical knowledge, integration and interpretation of different investigations, professional competence in the area of acute poisoning, associated acute systemic disturbances, intensive care medicine, and related resuscitative measures

3. Course intended learning outcomes (ILOs):

A-Knowledge and understanding

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|---|--|
| <p>A. Describe the resuscitative measures (Cardiopulmonary Resuscitation - Basic Life Support (BLS), and Advance Life Support (ALS) and critical care modalities in patients with acute or chronic intoxications or complicated cases with system failure in addition;</p> <p>A1 . Explain the usual evolution of poisoning. Depict the prognostic signs and interpret their significance using the investigative tools and toxicology laboratory results.</p> <p>A2 . Understand the basis of the critical care antidotes and drugs, equipment and their functioning, use indications, values, complications and limitations according to type of poisons.</p> | <p>-Didactic (lectures, seminars, tutorial)</p> | <p>- Written and oral examination - Log book</p> |

| | | |
|---|--|--|
| <p>A3 . Comprehend the preset parameters of mechanical ventilation, adjustments, meaning of monitoring value for all types of intoxication, stage of the disease and circumstances.</p> <p>A4 . Realize the monitoring value of electrocardiographic changes, significance in different intoxication and emergency management.</p> <p>A5 . Describe the critical care measurements in poisoned patients complicated with system failure.</p> <p>B. Understand the basis of elimination and detoxification procedures, their potential values and risks and their indications as well as;</p> <p>B1. Understand the basis and indications of hemodialysis and recommend specific prescriptions for every poison and other circumstances.</p> <p>B2. Understand the basis of other procedures helping the eliminations of poison as peritoneal dialysis, hemofiltration and hemoperfusion.</p> <p>B3. Outline the required emergency investigational procedures that help in diagnosis of acute intoxications.</p> <p>C. Outline the required emergency investigational procedures that help in diagnosis of acute intoxications.</p> | | |
|---|--|--|

B-Intellectual outcomes

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|--|---|
| A. Design and present case in common problem related to Intensive Care for Poisoning Cases. | -Didactic (lectures, seminars, tutorial) | -Written and oral examination - Log book |
| B. Apply the basic and clinically supportive sciences which are appropriate to Intensive Care for Poisoning Cases. | | |
| C. Demonstrate an investigatory and analytic thinking “problem – solving “approaches to clinical situation related to Intensive Care for Poisoning Cases. | | |
| D. Plan research projects. | | |
| E. Write scientific papers. | | |
| F. Lead risk management activities as a part of clinical governs. | | |
| G. Plan quality improvement activities in the field of medical education and clinical practice in Intensive Care for Poisoning Cases. | | |
| H. Create and innovate plans, systems, and other issues for improvement of performance in Intensive Care for Poisoning Cases. | | |
| I. Present and defend his / her data in front of a panel of experts | | |
| J. Formulate management plans and alternative decisions in different situations in the field of Intensive Care for Poisoning Cases. | | |

C-Practical skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|---|--|
| A. Take history, examine and clinically diagnose different conditions related to Intensive Care of poisoned cases | Lecture - Seminar - Outpatient - Inpatient - Case presentation - Direct observation | - OSCE at the end of each year - log book & portfolio - One MCQ examination at the second half of the second year and another one in the third year - Clinical exam |
| B. Order the following noninvasive and invasive diagnostic procedures; <ul style="list-style-type: none"> • Ventilator adjustment • CVP • Oral airway placement • ABG sampling • Cardiac monitoring | - Clinical round with senior staff - Observation - Post graduate teaching - Hand on workshops - Perform under supervision of senior staff | - Procedure presentation - Log book - Check list |
| C. Interpret the following noninvasive and invasive diagnostic procedures e.g.: <ul style="list-style-type: none"> • ABG sampling • Hemodynamic Monitoring • ECG | - Clinical round with senior staff - Observation - Post graduate teaching - Hand on workshops | - Procedure presentation - Log book - Check list |

| | | |
|--|---|---|
| | -Perform under supervision of senior staff | |
| <p>D. Perform the following noninvasive/invasive diagnostic procedures e.g:</p> <ul style="list-style-type: none"> • Ventilator adjustment • CVP • Oral airway placement • ABG sampling | <p>-Clinical round with senior staff</p> <p>-Observation</p> <p>-Post graduate teaching</p> <p>-Hand on workshops</p> <p>-Perform under supervision of senior staff</p> | <p>- Procedure presentation</p> <p>- Log book</p> <p>- Chick list</p> |
| <p>E. Prescribe the following noninvasive and invasive therapeutic procedures e.g:</p> <ul style="list-style-type: none"> • Intubation and mechanical ventilation • Resuscitation • Gastric lavage • Emesis | <p>-Clinical round with senior staff</p> <p>-Observation</p> <p>-Post graduate teaching</p> <p>-Hand on workshops</p> <p>-Perform under supervision of senior staff</p> | <p>- Procedure presentation</p> <p>- Log book</p> <p>- Chick list</p> |
| <p>F. Perform the following noninvasive and invasive therapeutic procedures e.g.:</p> <ul style="list-style-type: none"> • Intubation and mechanical ventilation • Weaning from mechanical ventilation • Resuscitation • Resuscitation • Gastric lavage • Emesis | <p>-Clinical round with senior staff</p> <p>-Observation</p> <p>-Post graduate teaching</p> <p>-Hand on workshops</p> <p>-Perform</p> | <p>- Procedure presentation</p> <p>- Log book</p> <p>- Chick list</p> |

| | | |
|--|-----------------------------------|--|
| | under supervision of senior staff | |
| G. Develop and carry out patient management plans for patients discharged from ICU | -Clinical round with senior staff | |
| H. Counsel and educate patients and their family about <ul style="list-style-type: none"> • Symptoms of acute toxicity • Methods of management | -Clinical round with senior staff | |
| I. Use information technology to support patient care decisions and patient education for the Intensive Care of poisoned patients. | -Clinical round with senior staff | |
| J. Provide health care services aimed at preventing health problems related to Toxicology | -Clinical round with senior staff | |
| K. Work with health care professionals, including those from other disciplines, to provide patient-focused care for the patients | -Clinical round with senior staff | |
| L. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible 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 in the common problems (plan and conduct audit cycles) | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| B. Locate, appraises, and assimilates evidence from scientific studies related to patients' health problems. | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| C. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness | | |
| D. Use information technology to manage information, access on-line medical information; and support their own education | | |
| E. Lead the learning of students and other health care professionals. | | |

Interpersonal and Communication Skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|---|---|
| F. Create and sustain a therapeutic and ethically sound relationship with patients | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| G. Perform the following oral communications: <ul style="list-style-type: none"> • Advise patient for synchrony • Deal with patient relatives • Ordering residents • Ordering nurses | | |
| H. Fill the following reports: <ul style="list-style-type: none"> • Patients' medical reports • ABGs reports • Toxicological reports | | |
| I. Work effectively with others as a member or leader of a health care team <ul style="list-style-type: none"> • A member of a health care team in intensive care • A leader of a health care team in night shift | | |

Professionalism

| ILOs | Methods of teaching/ Learning | Methods of Evaluation |
|--|--|--------------------------------|
| J. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self- | - Observation - Senior staff experience | -Objective structured clinical |

| | | |
|--|---------------|---------------------------------|
| interest. | - Case taking | examination - Patient survey |
| K. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices. | | - 360o global rating |
| L. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities | | |

Systems-Based Practice

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|--|---|
| M. Work effectively in different health care delivery settings and systems. | - Observation - Senior staff experience | - 360o global rating |
| N. Practice cost-effective health care and resource allocation that does not compromise quality of care | | - Check list evaluation of live or recorded performance |
| O. Advocate for quality patient care and assist patients in dealing with system complexities | | - 360o global rating - Patient survey |
| P. Partner with health care managers and health care providers to assess, coordinate, and improve health care and predict how these activities can affect system performance | | |

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

Time Schedule: First Part

| Topic | Covered ILOs | | | |
|---|--------------|--------------|------------------|----------------|
| | Knowledge | Intellectual | Practical skills | General Skills |
| | A | B | C | D |
| Cardiopulmonary Resuscitation - Basic Life Support (BLS), and Advance Life Support (ALS) | A-C | A-C | A-F | A-J |
| MANAGEMENT OF SPECIFIC PRESENTATIONS | | | | |
| Evaluation, causes and management of shock in poisoning: CVP, ECG | A | A-J | A-L | A-J |
| Arrhythmias: Management in different intoxication states | A | A-J | A-L | A-J |
| Assessment of respiratory function: imaging, ABG, clinical data | A | A-C | A-L | A-J |
| Respiratory presentations in poisoning: Respiratory failure, Pulmonary edema (CPE – NCPE), ARDS, | A | A-J | A-L | A-J |
| Clinical approach to the comatose patient. Differential diagnosis of metabolic, structural versus toxic coma. | A.C | A-J | A-L | A-P |
| Seizures, agitation, delirium and confusional states: Causes and management in Toxicology | A | A-J | A-L | A-P |
| Assessment and Monitoring of renal function in critical care intoxicated patient | C | A-J | A-L | A-P |
| Toxic and fulminant hepatitis and failure in acute poisoning | A | A-J | A-L | A-P |
| Coagulopathy (DIC). Monitoring and management | A.C | A-J | A-L | A-J |
| Acid base, electrolytes and fluid imbalance | A | A-J | A-L | A-J |
| Elimination in Acutely toxic patients | B | A-C | A-L | A-P |

5. Course methods of teaching/learning:

5. Didactic (lectures, seminars, tutorial)
6. Observation and supervision
7. Written & oral communication
8. Clinical rotation
9. Senior staff experience

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

2. Extra didactic (lectures, seminars, tutorial)

7. Course assessment methods:

i. Assessment tools:

1. Written and oral examination
2. Clinical exam
3. Log book

ii. **Time schedule:** After 12 months from applying to the M D degree.

iii. **Marks:** 75

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Goldfrank, L. R., & Flomenbaum, N. (2006). Goldfrank's toxicologic emergencies. New York: McGraw-Hill.
- Shannon M.W., boron S.W. and burns M. (2007): Haddad and Winchester's Clinical Management of Poisoning and Drug Overdose, 4th edition.
- Handbook of medical toxicology, Peter Viccellio, Little, Brown and company,1993.

iii. Recommended books

- Brent, J., Burkhart, K., Dargan, P., Hatten, B., Megarbane, B., Palmer, R., White, J. (Eds.). (2017). Critical Care Toxicology.

iv. Periodicals, Web sites, ... etc

➤ Periodicals,

- Canadian Journal of Emergency Medicine.
http://www.cma.ca/index.php/ci_id/15639/la_id/1.htm
- The Internet Journal of Emergency and Intensive Care Medicine.
http://www.ispub.com/journal/the_internet_journal_of_emergency_and_intensive_care_medicine.html
- BMC Emergency Medicine.
<http://www.biomedcentral.com/bmccemergmed>
- International Journal of Emergency Medicine
<http://www.ncbi.nlm.nih.gov/pmc/journals/594/>
- Urgence Pratique. <http://www.urgence-pratique.com/>
- Journal of Critical Care
<http://www.elsevier.com/wps/find/journaldescription>.
- Latest news, updates and guidelines for emergency physicians.
<http://www.acep.org/>
- A cluster of databases on toxicology, hazardous chemicals and related areas. <http://toxnet.nlm.nih.gov/>
- Discussions, classes and reviews sponsored by The University of Illinois at Chicago. <http://www.uic.edu/com/er/toxikon>
- Database of photos, botanical information, and health information on poisonous plants.
<http://www.ansci.cornell.edu/plants/index.html>
- Hunter Area Toxicology Service's modules on approximately 25 common toxic drugs and environmental agents, including information on pharmacology, toxicology, and treatment.
<http://www.hypertox.com/>
- AAPCC is a nationwide organization of poison centers and interested individuals. <http://www.aapcc.org/>
- Extensive menu of links to data on pharmaceuticals, biotechnology, and pharmaceutical companies.
<http://pharminfo.com/phrmlink.html>
- Search engine for commonly prescribed drugs with; dosages, indications, interactions, pharmacokinetics, costs and more.
<http://www.clinicalpharmacology.com/>
- Comprehensive collection of drugs of abuse.
<http://www.streetdrugs.org/>

- Access to Martindale's pharmacy center for drug information.
<http://www.martindalecenter.com/Pharmacy.html>
- <http://www.ecglibrary.com/> ECG library
- Web sites: <http://www.ncbi.nlm.nih.gov/pubmed/>

9. Signatures

| | |
|--|--|
| Course Coordinator: Prof. | Head of the Department: Prof. |
| Date: | Date: |

Course 6: Toxicological and Biochemical analysis

**Name of department: Forensic Medicine and Clinical Toxicology
Department**

**Faculty of medicine
Assiut University
2022-2023**

1. Course data

- + **Course Title:** Toxicological and Biochemical analysis
- + **Course code:** CLT310B
- + **Speciality** Clinical Toxicology
- + **Number of credit points:** 2.5 credit point; 2CP for didactics (80%) and 0.5CP (20%)for training.
- + **Department (s) delivering the course:** Department of Forensic Medicine and Clinical Toxicology - Faculty of Medicine- Assiut- Egypt.
- + **Coordinator (s):**
 - **Principle coordinator:** Prof. Heba Atia
 - Assistant coordinator (s) Dr. Nora zeidan
- + **Date last reviewed:** April 2022.
- + **Requirements (prerequisites) if any :**
 - None
- + **Requirements from the students to achieve course ILOs are clarified in the joining log book.**

2. Course Aims

1. To enable MD students to master high level of skills, in interpretation of different investigations, professional competence in the area of clinical toxicology.
2. To provide candidates with enough general skills related to collecting samples in a proper way and time and to conceive the principles of the tests, writing specialized toxicological reports, use of information technology in research and teaching junior students and counseling patients and their families about toxicological conditions.
3. Provide candidates with fundamental knowledge and skills of laboratory capabilities essential in differentiating and assisting in the evaluation of the severity of poisoning as confident guides for subsequent management of intoxicated patients.

3. Course intended learning outcomes (ILOs):

A-Knowledge and understanding

| ILOs | Methods of teaching/ Learning | Methods of Evaluation |
|---|---|---|
| <p>A.Demonstrate in-depth knowledge and understanding of:</p> <ul style="list-style-type: none"> • Toxicological and biological tests required for proper diagnosis and management of poisoned cases. • Normal values of the biological and toxicological results (arterial blood gas, electrolytes, liver function tests, renal function tests, cardiac & muscle enzymes, coagulation studies, CBC –RBS and urine | <p>Lectures – tutorials- assignments – seminars - discussions</p> | <p>Written examination+ attendance+ assignments</p> |

- Basis of indirect toxicological markers and their significance
- Proper sample collection procedures for each test based on kinetics of the drug / poison, time delay and sensitivity of the test requested
- Principles and steps of techniques used in toxicological analysis
- Reliability, reproducibility, specificity and sensitivity and the basic requirements of each methodology.

B. Understand:

- Kinetic and dynamic of different poisons and rules governing their biotransformation, redistribution and elimination
- Significance of poison monitoring in biological fluids

C. Recognize drugs of abuse, Drugs abused in sports adulteration testing, and problems encountered in screening for abused drugs

D. Mention the principles of the following:

- Ethical, medico logical principles and implications and cost of each method of analysis.
- Principles and measurements of quality assurance and quality improvement in toxicological testing

B-Intellectual outcomes

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|--|---|
| A. Apply the basic and clinically supportive sciences which are appropriate to toxicological and biological analysis related problems. | -Clinical rounds -Senior staff experience | -Procedure and case presentation -Log book & Portfolio |
| B. Demonstrate an investigatory and analytic thinking “problem – solving “approaches to situation related to toxicological and biological analysis | | |
| C. Plan research projects. | | |
| D. Write scientific papers. | | |
| E. Plan quality improvement activities in the field of medical education and clinical practice in to Toxicological and Biological analysis. | | |
| F. Create and innovate plans, systems, and other issues for improvement of performance in to Toxicological and Biological analysis. | | |

C-Practical skills (Patient Care)

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|--|--|
| A. Perform the following: <ul style="list-style-type: none"> • extraction procedures of different groups of poisons • colorimetric toxicological tests on qualitative and quantitative basis • thin layer chromatographic testing for poisons in correct manner • immunoassay laboratory tests on automated equipment | -Clinical round with senior staff -Observation -Post graduate teaching -Hand on workshops -Perform | - Procedure presentation - Log book - Chick list |

| | | |
|---|--|--|
| <ul style="list-style-type: none"> • spectrophotometric analysis of acetaminophen, salicylates and other compounds in a sound manner • urgent laboratory analysis as arterial blood gas and electrolytes and blood glucose • therapeutic drug monitoring • Drug screen | under supervision of senior staff | |
| <p>B- Interpret the results of following diagnostic analysis</p> <ul style="list-style-type: none"> • Routine appropriate Lab investigations. • Arterial blood gases • chromatographic analysis on Gas Chromatography and High Performance Chromatography (HPLC), Mass spectrometry, Spectrophotometry, immunoassays | -Clinical round with senior staff -Observation -Post graduate teaching -Hand on workshops -Perform under supervision of senior staff | - Procedure presentation - Log book - Check list |
| <p>C. Work with health care professionals, including those from other disciplines</p> | -Clinical round with senior staff | |
| <p>D. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible 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 in the common problems | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| B. Appraise scientific evidence. | | |
| C. Use information technology to manage information, access on-line medical information; and support their own education | | |
| D. Lead the learning of students and other health care professionals. | | |

Interpersonal and Communication Skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|---|---|
| E. Communicate with colleagues and seniors for the sake of a more accurate diagnosis and effective treatment | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| F. Perform the following oral communications: <ul style="list-style-type: none"> • Interpretation of the results of different investigations | | |

Professionalism

| ILOs | Methods of teaching/ Learning | Methods of Evaluation |
|--|---|--|
| G. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest. | <ul style="list-style-type: none"> - Observation - Senior staff experience - Case taking | <ul style="list-style-type: none"> -Objective structured clinical examination - Patient survey |
| H. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices. | | <ul style="list-style-type: none"> - 360o global rating |
| I. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities | | |

Systems-Based Practice

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|--|---|
| J. Work effectively in different health care delivery settings and systems. | <ul style="list-style-type: none"> - Observation - Senior staff experience | <ul style="list-style-type: none"> - 360o global rating |
| K. Practice cost-effective health care and resource allocation that does not compromise quality of care | | <ul style="list-style-type: none"> - Check list evaluation of live or recorded performance |
| L. Advocate for quality patient care and assist patients in dealing with system complexities | | <ul style="list-style-type: none"> - 360o global rating - Patient survey |
| M. Partner with health care managers and health care providers to assess, coordinate, and improve health care and predict how these activities can affect system performance | | |

4. Course contents (topics/modules/rotation Course Matrix

Time Schedule: First Part

| Topic | Covered ILOs | | | |
|--|--------------|--------------|-----------------|----------------|
| | Knowledge | Intellectual | Practical skill | General Skills |
| INDICATIONS FOR TOXICOLOGICAL ANALYSIS | A-C | A&B | - | K |
| SAMPLE COLLECTION PROCEDURES, TRANSPORT AND STORAGE | A&D | E&F | A | E&G |
| TYPE OF SAMPLES, DRUGS IN SALIVA OR HAIR ANALYSIS | A-D | A&F | - | - |
| EXTRACTION PROCEDURES (ACIDIC, BASIC AND SPECIAL) | K-M | H | - | N |
| DRUGS OF ABUSE , ADULTERATION TESTING, AND PROBLEMS ENCOUNTERED IN SCREENING FOR DOA | C | B | A-D | A-M |
| ALCOHOL, AND TOXIC ALCOHOLS | C | B | A-D | A-M |
| DRUG ABUSE IN SPORT | C | B | A-D | A-M |
| PESTICIDES, RODENTICIDES | A-B | A | A-D | A-M |
| THERAPEUTIC DRUG MONITORING | A | A-F | A-B | A—M |
| DRUG SCREEN | A | A-F | A-B | A-M |
| VOLATILE SUBSTANCES | A-B | - | A-B | A-M |
| METALS | A-B | - | A-B | A-M |
| GASES | A-B | - | A-B | A-M |
| ANIONS | A-B | - | A-B | A-M |
| COLOR TESTS AND BED SIDE TESTS | A | - | A | A-M |
| IMMUNOASSAYS | A | - | A | K |
| ULTRAVIOLET, VISIBLE AND FLUORESCENCE SPECTROPHOTOMETRY | A | - | A | K |
| THIN—LAYER CHROMATOGRAPHY | A | - | A | K |
| GAS CHROMATOGRAPHY | A | A | B | F |

| | | | | |
|--|-----|-----|-----|---|
| HIGH PERFORMANCE LIQUID CHROMATOGRAPHY | A | A | B | F |
| MASS SPECTROMETRY | A | A | B | F |
| EMERGING TECHNIQUES | A | A | - | - |
| BIOLOGICAL SAMPLING (BLOOD, URINE..) | A | A-D | A-B | E |
| TOXICOLOGICAL INDICES IN BIOLOG. TESTS | A-C | A-F | A-B | - |
| ARTERIAL BLOOD GAS | A | A-D | A-B | E |
| ELECTROLYTES (NA – K – CA – MG..) | A | A-D | A-B | E |
| TRANSAMINASES AND LIVER FUNCTION T | A | A-D | A-B | E |
| KIDNEY FUNCTION TESTS (SERUM- URINE) | A | A-D | A-B | E |
| CPK AND CARDIAC & MUSCLE ENZYMES | A | A-D | A-B | E |
| COAGULATION STUDIES AND CBC –RBS | A | A-D | A-B | E |
| URINE | A | A-D | A-B | E |

5. Course Methods of teaching/learning:

1. Lectures.
2. Discussions.
3. Exercises.

6. Course assessment methods:

i. Assessment tools:

1. Written examination.
2. Attendance and active participation.
3. Oral examination.
- 4- Practical and clinical exam

ii. Time schedule: After 6 months from applying to the M D degree.

iii. Marks: 125 (60 for written exam + 30 oral exam + 35 practical and clinical exam).

7. List of references

i. Lectures notes

- Course notes.
- Staff members print out of lectures and/or CD copies.

ii. Essential books

Clark's Analysis of Drugs and Poisons by Moffat et al

iii- Recommended Books

- Handbook of Basic Tables for Chemical Analysis Second Edition. Bruno and Svoronos, 2003
- Basic Analytical Toxicology by Flanagan R,2005.
- Volatile Substance Abuse by Flanagan et al,1994.
- Physician guide to laboratory diagnosis of metabolic diseases .Blau, Duran, Blaskovics and Gibson. 2nd Edition Springer-Verlag Berlin,2003.
- Fiche de données toxicologiques et environnementales des substances chimiques ([Institut National de l'Environnement Industriel et des Risques](#))
- TIAFT Proceedings and meetings
- Handbook of medical toxicology, Peter Viccellio, Little ,Brown and company,1993.
- Drug Abuse Handbook: Steven Karch. CRC Press,4th edition,2008.

iv. Journal and web site

- ODCCP Bulletin on Narcotics
- Journal of analytical Toxicology

8. Signatures

Course Coordinator:

Prof. Heba Atia

Dr. Nora zeidan

Date:

Head of the Department:

Prof.Dr Randa Hussein

Date:

Course 7: Advanced Clinical Toxicology

Name of department: Forensic Medicine and Clinical Toxicology

Faculty of medicine

Assiut University

2022-2023

1. Course data

- + **Course Title:** Advanced Clinical Toxicology
- + **Course code:** CLT310C
- + **Speciality** Clinical Toxicology
- + **Number of credit points:** 147 credit point - didactic 24 credit point (16.3%) - practical 123 credit point (83.7%)
- + **Department (s) delivering the course:** Department of Forensic Medicine and Clinical Toxicology - Faculty of Medicine- Assiut- Egypt.
- + **Coordinator (s):**
 - **Principle coordinator:** Prof. Wafaa M.Abd El Moneim
 - **Assistant coordinator (s):** Prof. Safaa Maher George
Dr. Heba A Yassa
Dr. Nora Zeidan Abdellah
- + **Date last reviewed:** April 2022
- + **Requirements (prerequisites) if any:**
 - None
- + **Requirements from the students to achieve course ILOs are clarified in the joining log book.**
- + **This course consists of 3 Units(Modules)**
 - 1- **Unit 1: Advanced General Toxicology and First aid of Poisoning.**
 - 2- **Unit 2: Advanced Special toxicology**
 - 3- **Unit 3: Advanced Studies in Dependence and Illicit Substances.**

Unit Coordinator (s):

| Unit | Principle Coordinator | Assistant coordinators |
|---|-----------------------------------|---|
| 1- Unit (Module) 1: Advanced General Toxicology and First aid of Poisoning.. | Prof. Wafaa M.Abd El Moneim | Prof. Safaa Maher George Dr. Heba A. Yassa Dr. Nora Zeidan Abdellah |
| 2- Unit (Module) 2 Advanced Special toxicology | Prof. Wafaa M.Abd El Moneim | Prof. Safaa Maher George Dr. Heba A. Yassa Dr. Nora Zeidan Abdellah |
| 3- Unit (Module) 3 Advanced Studies in Dependence and Illicit Substances. | Prof. Wafaa M.Abd El Moneim | Prof. Safaa Maher George Dr. Heba A. Yassa Dr. Nora Zeidan Abdellah |

2. Course Aims

2/1 To enable MD candidate to master high level of clinical skills, in addition to update and advanced medical knowledge, integration and interpretation of different investigations, professional competence in the area of clinical toxicology.

2/2-To provide candidates with enough general skills related to clinical toxicology including, writing specialized medical reports, use of information technology in clinical decisions and research, teaching junior students and counseling patients and their families about poisoning.

3. Course intended learning outcomes (ILOs):

Course 7: Unit 1: Advanced General Toxicology and First aid of poisoning

Name of department: Forensic Medicine and Clinical Toxicology

Faculty of medicine

Assiut University

2022-2023

1. Unit data

- + **Course Title:** Advanced Clinical Toxicology.
 - + **Course code:** CLT310C
 - + **Speciality** Clinical Toxicology
 - + **Number of credit points:** 7 credit point for didactic and 39.5CP for training, total 46.5CP
- Department (s) delivering the unit:** Department of Forensic Medicine and clinical Toxicology Faculty of Medicine- Assiut- EGYPT
- + **Coordinator (s):** Staff members of Forensic Medicine and clinical Toxicology department as annually approved by the department council
 - + **Date last reviewed:** April 2023.
 - + **General requirements (prerequisites) if any:** None.
 - + **Requirements from the students to achieve unit ILOs are clarified in the joining log book.**

2. Unit Aims

2/1-To acquire in-depth, the physiological background necessary for general toxicology in clinical reasoning, diagnosis first aid of poisoning.

3. Unit intended learning outcomes (ILOs):

A-Knowledge and understanding

| ILOs | Methods of teaching/ learning | <i>Methods of Evaluation</i> |
|--|--|---|
| <p>A. Describe in depth the updated details of the following principles related to General Toxicology and First aid of poisoning:</p> <ul style="list-style-type: none"> • Pathophysiology, toxic causes, clinical picture and diagnosis of complications of poisoning (respiratory, neurological, cardiovascular and metabolic) • Biochemical toxicokinetic & molecular basis of toxicology • Resuscitative measures and critical care modalities in patients with intoxications complicated with system failure. • Emergency resuscitative measures in Toxicological disasters and Transportation of Critically ill Patient • Details of the steps of the general management of acutely intoxicated patients. • Different body systems respond to poisoning and the effects of poisons on body systems: <ul style="list-style-type: none"> - Nephrotoxicity | <ul style="list-style-type: none"> -Didactic (lectures, seminars, tutorial) -Outpatient -Inpatient -Case presentation -Direct observation | <ul style="list-style-type: none"> - log book -Objective structure clinical examination (OSCE) One MCQ examination at the second half of the second year -Written and oral exam |

- Hepatotoxicity
- Toxicity of hematological system
- Immunotoxicity
- Dermatotoxicology
- Ophthalmic toxicology
- Otolaryngeal toxicology
- Nervous system toxicology
- Cardiovascular toxicology
- Reproductive toxicology
- Gastrointestinal toxicology
- Genitourinary toxicology

B. Illustrate the Toxic causes, diagnosis of specific clinical complications related to **General Toxicology and First aid of poisoning:**

- Neurological complications of poisoning and Management
- Cardiovascular complications
- Respiratory complications
- Acid Base and Electrolytes imbalance

C. Explain different toxidromes

D. Outline the atypical pictures of acute poisoning due to pregnancy, extremes of age and multiple overdoses and their management.

E. Identify the following conditions:

- Industrial, Environmental toxicology & pollution.
- Carcinogenic, Mutagenic, Teratogenic effects of toxins and Developmental toxicology

F. Update the usual evolution of poisoning. Depict the prognostic signs and interpret their

| | | |
|--|--|--|
| <p>significance using the investigative tools and toxicology laboratory results.</p> <p>G. Memorize the basis of the critical care antidotes and drugs, equipment and their functioning, use indications, values, complications and limitations according to type of poisons.</p> <p>H. Mention Role of Analytical Toxicology, and imaging in ICU Management.</p> <p>I. Explain the basis, indications and risks of hemodialysis and other procedures helping the eliminations of poison as peritoneal dialysis, hemofiltration and hem perfusion.</p> | | |
|--|--|--|

B-Intellectual outcomes

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|--|---|
| A. Apply the basic (physiological) supportive sciences which are appropriate to General toxicology and first aid of poisoning. | -Didactic (lectures, seminars, tutorial) | -Written and oral examination - Log book |
| B. Demonstrate an investigatory and analytic thinking (problem solving) approaches to common clinical situations related to General toxicology and first aid of poisoning. | | |

C-Practical skills (Patient Care)

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|--|---|
| <p>A. Take history, examine and clinically diagnose different conditions related to Respiratory Intensive Care Medicine</p> | <p>Lecture - Seminar - Outpatient - Inpatient - Case presentation - Direct observation</p> | <p>- OSCE at the end of each year - log book & portfolio - One MCQ examination at the second half of the second year and another one in the third year - Clinical exam</p> |
| <p>B. Order noninvasive and invasive diagnostic procedures e.g: ABG sampling, ECG, drug screen. etc</p> | <p>- Clinical round with senior staff - Observation - Post graduate teaching - Hand on workshops - Perform under supervision of senior staff</p> | <p>- Procedure presentation - Log book - Check list</p> |
| <p>C. Interpret noninvasive and invasive diagnostic procedures e.g</p> <ul style="list-style-type: none"> ● ABG sampling | <p>- Clinical round with senior staff</p> | <p>- Procedure presentation - Log book</p> |

| | | |
|---|--|--|
| <ul style="list-style-type: none"> • Therapeutic drug monitoring • Toxicological report • ECG | <ul style="list-style-type: none"> -Observation -Post graduate teaching -Hand on workshops -Perform under supervision of senior staff | <ul style="list-style-type: none"> - Chick list |
| <p>D. Perform noninvasive/invasive diagnostic procedures e.g. ABG sampling</p> | <ul style="list-style-type: none"> -Clinical round with senior staff -Observation -Post graduate teaching -Hand on workshops -Perform under supervision of senior staff | <ul style="list-style-type: none"> - Procedure presentation - Log book - Chick list |
| <p>E. Prescribe non invasive and invasive therapeutic procedures. e.g</p> <ul style="list-style-type: none"> • Diuresis • dialysis and others) of poisoning and extracorporeal methods of enhancing elimination | <ul style="list-style-type: none"> -Clinical round with senior staff -Observation -Post graduate teaching -Hand on workshops -Perform under supervision of | <ul style="list-style-type: none"> - Procedure presentation - Log book - Chick list |

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| | senior staff | |
| <p>F. Perform non invasive and invasive therapeutic procedures e.g.</p> <ul style="list-style-type: none"> • Gastric lavage • Emesis • Catharsis • whole bowel irrigation | <p>-Clinical round with senior staff</p> <p>-Observation</p> <p>-Post graduate teaching</p> <p>-Hand on workshops</p> <p>-Perform under supervision of senior staff</p> | <p>- Procedure presentation</p> <p>- Log book</p> <p>- Chick list</p> |
| <p>G. Develop and carry out patient management plans for the following problems</p> <ul style="list-style-type: none"> • Discharged patients from ICU • Previously intubated | <p>-Clinical round with senior staff</p> | |
| <p>H. Counsel and educate patients and their family about</p> <ul style="list-style-type: none"> • Symptoms of poisoning • Methods of management | <p>-Clinical round with senior staff</p> | |
| <p>I. Use information technology to support patient care decisions and patient education for the clinical toxicology related conditions.</p> | <p>-Clinical round with senior staff</p> | |
| <p>J. Provide health care services aimed at preventing the systemic complications and failure due to toxicity</p> | <p>-Clinical round with senior staff</p> | |
| <p>K. Work with health care professionals, including those from other disciplines, to provide patient-focused care</p> | <p>-Clinical round with senior staff</p> | |

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| L. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible medical records) | | |
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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 in the common problems | <ul style="list-style-type: none"> -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | <ul style="list-style-type: none"> - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| B. Locate, appraises, and assimilates evidence from scientific studies related to patients' health problems. | <ul style="list-style-type: none"> -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | <ul style="list-style-type: none"> - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| C. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness | | |
| D. Use information technology to manage information, access on-line medical | | |

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| information; and support their own education | | |
| E. Lead the learning of students and other health care professionals. | | |

Interpersonal and Communication Skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|---|---|
| F. Create and sustain a therapeutic and ethically sound relationship with patients | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| G. Perform the following oral communications: <ul style="list-style-type: none"> • Advise patient for synchrony • Deal with patient relatives • Ordering residents • Ordering nurses | | |
| H. Fill the Patients' medical reports | | |
| I. Work effectively with others as a member or leader of a health care team as regard diagnosis and treatment of conditions mentioned above | | |

Professionalism

| ILOs | Methods of teaching/ Learning | Methods of Evaluation |
|--|---|--|
| J. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest. | <ul style="list-style-type: none"> - Observation - Senior staff experience - Case taking | <ul style="list-style-type: none"> -Objective structured clinical examination - Patient survey |
| K. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices. | | <ul style="list-style-type: none"> - 360o global rating |
| L. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities | | |

Systems-Based Practice

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|--|---|
| M. Work effectively in different health care delivery settings and systems. | <ul style="list-style-type: none"> - Observation - Senior staff experience | <ul style="list-style-type: none"> - 360o global rating |
| N. Practice cost-effective health care and resource allocation that does not compromise quality of care | | <ul style="list-style-type: none"> - Check list evaluation of live or recorded performance |
| O. Advocate for quality patient care and assist patients in dealing with system complexities | | <ul style="list-style-type: none"> - 360o global rating - Patient survey |
| P. Partner with health care managers and health care providers to assess, coordinate, and improve health care and predict how these activities can affect system performance | | |

Unit 2 (Module) Advanced Special Toxicology

1. Unit data

- + **Course Title:** Advanced Clinical Toxicology.
 - + **Course code:** CLT310C
 - + **Speciality** Clinical Toxicology
 - + **Number of credit points:** 12credit point for didactic and 61.5CP for training, total 73.5CP
- Department (s) delivering the unit:** Department of Forensic Medicine and clinical Toxicology Faculty of Medicine- Assiut- EGYPT
- + **Coordinator (s):** Staff members of Forensic Medicine and clinical Toxicology department as annually approved by the department council
 - + **Date last reviewed:** April 2022.
 - + **General requirements (prerequisites) if any:** None.
 - + **Requirements from the students to achieve unit ILOs are clarified in the joining log book.**

2. Unit Aims

2/1-To acquire in-depth, the updated knowledge and clinical skills necessary for special toxicology in clinical reasoning, and clinical diagnosis of poisoning and management.

3. Intended learning outcome of Unit 2

A-Knowledge and understanding

| ILOs | Methods of teaching/ learning | <i>Methods of Evaluation</i> |
|--|---|---|
| <p>A. Explain the pathophysiology of common acute and chronic intoxications with drugs and chemicals</p> <p>B. Describe update and evidence based etiology, clinical picture, complications, diagnosis and management of the following acute and chronic intoxications with:</p> <p style="margin-left: 20px;">Over the Counter drugs Acetaminophen Salicylates Non-Steroidal Anti-Inflammatory Drugs Anorexigenic drugs, Obesity Drugs common cold medications Vitamins and antioxidants Drugs That Affect Sexual Function.</p> <p style="margin-left: 20px;">Antimicrobials Cephalosporins and Penicillins Macrolides Quinolones Aminoglycosides Antituberculous drugs Antiviral drugs Antiprotozoal drugs (Antimalarials, Antiamebics and others) Antifungal drugs</p> <p style="margin-left: 20px;">Central Nervous System Drugs Antidepressants (TCA – SSRI) Neuroleptics Lithium Sedatives hypnotics (Benzodiazepines,</p> | <p>- Didactic (lectures, seminars, tutorial)</p> <p>-Outpatient -Inpatient - Case presentation -Direct observation</p> | <p>- Log book - Objective structure clinical examination (OSCE) - One MCQ examination at the second half of the second year -Written and oral exam</p> |

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| <p>Barbiturates, Meprobamate, Zopiclone, zolpidem, Melatonin receptor, bromides, plant origin sedatives.) Anxiolytics Others (Buspirone...) Muscle relaxants Others (Baclofen, Carisoprodol, ...) Antiepileptics CNS stimulants Respiratory Drugs Theophylline and Xanthines Beta2-adrenergic receptor agonist Cardiovascular Drugs Digitalis preparations Beta blockers Diuretics Calcium Channel Blockers Antiarrhythmics Antihypertensives Nitrates Hyperlipidemia drugs Anti-platelets Endocrine Drugs Oral hypoglycemic drugs and Insulin Steroids Metals and salts Lead Mercury Arsenic Iron Phosphorus Thallium Copper Silver... Corrosives (Acids, Alkalis, chlorine) Chemicals Toxic Gases (Carbon monoxide, cyanide, chlorine, hydrogen sulfide...) Toxic Alcohols and Glycols Pesticides Rodenticides (Phosphides, anticoagulants, Boron, Carbamates) Insecticides (Organophosphates, Organochlorines, Carbamates, Pyrethroids, Others) Herbicides (Paraquat, diquat, atrazine)</p> | | |
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| <p>Petroleum distillates and hydrocarbons Detergents, Dyes, food colors and preservatives Food Poisoning (Bacterial, viral, chemical, endogenous...) Botulism Ciguatera, Paralytic shellfish. Scombroid , Food allergy versus poisoning Animal Envenomation Scorpion Snakes Spider Bees and wasps and Marine(jelly fishetc) Toxic Plants Mushrooms Mycotoxins, Houseplant Atropine, Hyoscine (atropa belladonna & related plants) Other hallucinogenic psychoactive plants (Nutmeg, khat, supari, valerian.)</p> | | |
| <p>C. Describe the basic ethical and medicolegal principles relevant to the clinical toxicology.</p> | <p>- Didactic (lectures, seminars, tutorial) - Outpatient - Inpatient - Case presentation - Direct observation</p> | <p>- Log book - Objective structure clinical examination (OSCE) - One MCQ examination at the second half of the second year - Written and oral exam</p> |
| <p>D. Describe the basics and measurements of quality assurance to ensure good clinical care in Clinical.</p> | | |
| <p>E. Explain the ethical and scientific principles of medical research.</p> | | |
| <p>F. Explain the impact of common health problems in the field of clinical toxicology on the society.</p> | | |

B-Intellectual outcomes

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|-------------------------------|----------------------------------|
| A. Design and present case in common problem related to clinical toxicology. | -Clinical rounds | -Procedure and case presentation |
| B. Apply the basic and clinically supportive sciences which are appropriate to the advanced clinical toxicology. | -Senior staff experience | -Log book & Portfolio |
| C. Demonstrate an investigatory and analytic thinking “problem – solving “approaches to clinical situation. | | |
| D. Plan research projects. | -Clinical rounds | -Procedure and case presentation |
| E. Write scientific papers. | | |
| F. Lead risk management activities as a part of clinical governs. | -Senior staff experience | -Log book & Portfolio |
| G. Plan quality improvement activities in the field of medical education and clinical toxicology. | | |
| H. Create and innovate plans, systems, and other issues for improvement of performance. | | |
| I. Present and defend his / her data in front of a panel of experts | | |
| J. Formulate management plans and alternative decisions in different situations. | | |

C-Practical skills (Patient Care)

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|--|-------------------------------|
| A. Take proper history and examine patients in caring and respectful behaviors | -Didactic (lectures, seminars, tutorial) | -OSCE at the end of each year |
| B. Order and interpret noninvasive/invasive diagnostic procedures | | -log book & portfolio |
| C. Perform the proper required investigational procedure that helps in diagnosis and interpret | - Outpatient -Inpatient | - One MCQ |

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| <p>correctly</p> <p>D. Perform efficiently all procedures used for detoxification and elimination of poisoning</p> <p>E. Prescribe competency in applying protocols for specific and antidotal management of intoxicated cases</p> <p>F. Use information technology to support patient care decisions and patient education in common clinical situations related to</p> <p>G. Provide health care services aimed at preventing health problems related to Toxicology.</p> <p>H. Provide patient-focused care in common conditions related to Toxicology, while working with health care professionals, including those from other disciplines</p> <p>I. 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>-Case presentation</p> <p>-Direct observation</p> | <p>examination at the second half of the second year and another one in the third year</p> <p>-Clinical exam</p> |
|---|--|--|

D-General Skills

Practice-Based Learning and Improvement

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|--|--|
| <p>A. Perform practice-based improvement activities using a systematic methodology in the common problems (plan and conduct audit cycles)</p> | <p>-Simulations</p> <p>-Clinical round</p> <p>-Seminars</p> <p>-Lectures</p> <p>-Case presentation</p> <p>-Hand on</p> | <p>- Global rating</p> <p>-Procedure & case presentation</p> <p>-Log book & Portfolios</p> <p>- Chick list</p> |

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| | workshops | |
| B. Locate, appraises, and assimilates evidence from scientific studies related to patients' health problems. | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| C. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness | | |
| D. Use information technology to manage information, access on-line medical information; and support their own education | | |
| E. Lead the learning of students and other health care professionals | | |

Interpersonal and Communication Skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|---|---|
| F. Create and sustain a therapeutic and ethically sound relationship with patients | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| G. Fill the patients' medical reports | | |
| H. Work effectively with others as a member or leader of a health care team | | |

Professionalism

| ILOs | Methods of teaching/ Learning | Methods of Evaluation |
|--|---|--|
| I. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest. | <ul style="list-style-type: none"> - Observation - Senior staff experience - Case taking | <ul style="list-style-type: none"> -Objective structured clinical examination - Patient survey |
| J. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices. | | <ul style="list-style-type: none"> - 360o global rating |
| K. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities | | |

Systems-Based Practice

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|--|---|
| L. Work effectively in different health care delivery settings and systems. | <ul style="list-style-type: none"> - Observation - Senior staff experience | <ul style="list-style-type: none"> - 360o global rating |
| M. Practice cost-effective health care and resource allocation that does not compromise quality of care | | <ul style="list-style-type: none"> - Check list evaluation of live or recorded performance |
| N. Advocate for quality patient care and assist patients in dealing with system complexities | | <ul style="list-style-type: none"> - 360o global rating - Patient survey |
| O. Partner with health care managers and health care providers to assess, coordinate, and improve health care and predict how these activities can affect system performance | | |

Unit (Module) 3 Advanced studies in dependence and illicit substances

1. Unit data

- + **Course Title:** Advanced Clinical Toxicology.
- + **Course code:** CLT310C
- + **Speciality** Clinical Toxicology
- + **Number of credit points:** 5 credit point for didactic and 26.5CP for training, total 31.5CP
- Department (s) delivering the unit:** Department of Forensic Medicine and clinical Toxicology Faculty of Medicine- Assiut- EGYPT
- + **Coordinator (s):** Staff members of Forensic Medicine and clinical Toxicology department as annually approved by department councils
- + **Date last reviewed:** April 2022.
- + **General requirements (prerequisites) if any:** None.
- + **Requirements from the students to achieve unit ILOs are clarified in the joining log book.**

2. Unit Aims

2/1-To acquire in-depth, the updated knowledge and clinical skills necessary for **dependence and illicit dependence** in clinical reasoning, and clinical diagnosis of poisoning and management.

3. Unit intended learning outcome

A-Knowledge and understanding

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|--|--|
| <p>A. Explain the drugs used in dependence and drugs in current use.</p> <p>B. Describe in depth and details of the following ; -</p> <ul style="list-style-type: none"> - - Mechanisms and theory of drug abuse and general basics of abuse - the pathophysiological changes of drugs of dependence including central neurotransmitter changes. - the general complications of drug abuse and those of each particular drug: <ol style="list-style-type: none"> i) Opiates, narcotics and tramadol ii) Benzodiazepines and sedatives hypnotics (Zopiclone, barbiturates, meprobamate and myorelaxants) iii) Alcohol abuse iv) Central stimulants: Cocaine, amphetamine, designer drugs, sympathomimetic and others v) Cannabis vi) Solvent abuse vii) Potentially dependence producing drugs on the market viii) Other drugs of abuse: Research spirit <ul style="list-style-type: none"> - Clinical picture of overdose by different | <ul style="list-style-type: none"> -Didactic (lectures, seminars, tutorial) -Outpatient -Inpatient -Case presentation -Direct observation | <ul style="list-style-type: none"> - Log book - Objective structure clinical examination (OSCE) - One MCQ examination at the second half of the second year -Written and oral exam |

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| <p>drugs of abuse and their complications.</p> <ul style="list-style-type: none"> - Clinical picture of chronic use for every drug and their medical and surgical complications. - Mechanisms employed for different detoxification procedures. - Rules, including ethical regulations, governing the different methods of detoxification procedures in different parts of the world. - Value, dangers and limitations of detoxification in every drug, multi-drug use, patient's clinical status, chronicity and intensity of addiction. - Role of toxicological analysis in the follow up of ex-addicts - Medicolegal aspects of dependence and ethical Considerations - New concepts in management of dependence | | |
| <p>C. Mention briefly state of art of the rare diseases and conditions related to dependence .and illicit substances</p> | | |
| <p>D. Explain the facts and principles of the relevant basic and clinically supportive sciences related to clinical toxicology and dependence</p> | | |
| <p>D. explain the facts and principles of the relevant basic and clinically supportive sciences related to clinical toxicology and dependence</p> | | |
| <p>E. Describe the basic ethical and medicolegal principles revenant to the clinical toxicology and dependence</p> | | |
| <p>F. describe the basics of quality assurance to ensure good clinical care in his field</p> | | |
| <p>G. Explain the ethical and scientific principles of</p> | | |

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| medical research | | |
| H. Explains 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. Design and present case in common problem related to Advanced studies in dependence and illicit substances | -Clinical rounds -Senior staff experience | -Procedure and case presentation -Log book & Portfolio |
| B-Apply the basic and clinically supportive sciences which are appropriate to Advanced studies in dependence and illicit substances. | | |
| C-Demonstrate an investigatory and analytic thinking “problem – solving “approaches to clinical situation related to Advanced studies in dependence and illicit substances | | |
| D-Plan research projects. | | |
| E-Write scientific papers. | | |
| F-Lead risk management activities as a part of clinical governs. | | |
| G-Plan quality improvement activities in the field of medical education and clinical practice in Advanced studies in dependence and illicit substances | | |
| H-Create and innovate plans, systems, and other issues for improvement of performance in Advanced studies in dependence and illicit substances. | | |
| I-Present and defend his / her data in front of a panel of experts | | |
| J-Formulate management plans and alternative decisions in different situations in the field of Advanced studies in dependence and illicit substances | | |

C-Practical skills (Patient Care)

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|---|--|--|
| <p>A. Perform clinical examination of dependent patient in overdose and other dependence emergencies to accomplish accurate and detailed diagnosis of drug abuse with its medical complications.</p> <p>B. Order investigations and challenge tests pertinent to the clinical data and preliminary diagnosis.</p> <p>C. Perform decontamination procedures in a safe and appropriate technique according to the standards of care.</p> <p>D. Perform procedures and therapeutic actions in agreement with the emerging complications of drug of abuse as special devices oxygenation, special mode ventilation, arrhythmia correction.</p> <p>E. Perform detoxification the concerned toxic substance and avoid life threatening unethical and unapproved withdrawal methods.</p> <p>F. Detect relapses using the clinical challenge tests and confirmatory analytical methods</p> <p>G. Depict the clinical and pathological changes of drug abusers and clarify them and their correlation.</p> <p>H. Monitoring of drug abuser</p> | <p>-Didactic (lectures, seminars, tutorial)</p> <p>- Outpatient</p> <p>-Inpatient</p> <p>-Case presentation</p> <p>-Direct observation</p> | <p>-OSCE at the end of each year</p> <p>-log book & portfolio</p> <p>- One MCQ examination at the second half of the second year and another one in the third year</p> <p>-Clinical exam</p> |
| <p>I. Counsel and educate patients and their family</p> | <p>- Clinical round with senior staff</p> <p>-Perform under supervision of senior staff</p> | |
| <p>J. Use information technology to support patient</p> | <p>-Clinical round</p> | |

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| care decisions and patient education for dependence of illicit drugs. | with senior staff | |
| K. Work with health care professionals, including those from other disciplines, to provide patient-focused care | -Clinical round with senior staff | |
| L. Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive, timely and legible 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 in the common problems (plan and conduct audit cycles) | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| B. Locate, appraises, and assimilates evidence from scientific studies related to patients' health problems. | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |

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| | workshops | |
| C. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness | | |
| D. Use information technology to manage information, access on-line medical information; and support their own education | | |
| E. Lead the learning of students and other health care professionals | | |

Interpersonal and Communication Skills

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|---|---|
| F. Create and sustain a therapeutic and ethically sound relationship with patients | -Simulations -Clinical round -Seminars -Lectures -Case presentation -Hand on workshops | - Global rating -Procedure & case presentation -Log book & Portfolios - Chick list |
| G. Fill patients medical reports: | | |
| H. Work effectively with others as a member or leader of a health care team | | |

Professionalism

| ILOs | Methods of teaching/ Learning | Methods of Evaluation |
|---|---|--|
| I. Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society that supersedes self-interest. | - Observation - Senior staff experience - Case taking | -Objective structured clinical examination - Patient survey |

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| J. Demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices. | | - 360o global rating |
| K. Demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities | | |

Systems-Based Practice

| ILOs | Methods of teaching/ learning | Methods of Evaluation |
|--|--|---|
| L. Work effectively in different health care delivery settings and systems. | - Observation - Senior staff experience | - 360o global rating |
| M. Practice cost-effective health care and resource allocation that does not compromise quality of care | | - Check list evaluation of live or recorded performance |
| N. Advocate for quality patient care and assist patients in dealing with system complexities | | - 360o global rating - Patient survey |
| O. Partner with health care managers and health care providers to assess, coordinate, and improve health care and predict how these activities can affect system performance | | |

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

Time Schedule: Second Part

| Topic | Covered ILOs | | | |
|---|----------------|-------------------|-------------------------|------------------------|
| | Knowledge A | Intellectual B | Practical skill C | General Skills D |
| Unit 1 General Toxicology and first aid of poisoning | | | | |
| Section (1): General Toxicology | | | | |
| General clinical examination of poisoning cases and role of the lab. | A, | B | A-D | B,F,G,H, L |
| Toxidromes | C | A-B | A-D | B,F,G,H, L |
| Management of acute poisoning: - Detoxification (Gastric lavage, emesis, catharsis, whole bowel irrigation) - Elimination procedures (Diuresis, dialysis and others) - Extracorporeal methods of enhancing elimination. | D,G,H | A-B | E-H | A-P |
| Toxic causes, diagnosis of specific clinical complications | A,F,G | A-B | J,K | A-P |
| Neurological complications of poisoning and Management - Coma , Seizures, tremors, fasciculation - Agitation, Hallucinations and delusions and Behavioral changes - Encephalopathy, Cranial nerve toxicity - Peripheral neuropathy | A,F,G | A-B | J,K | A-P |
| Cardiovascular complications - Hypotension - Shock | A,F,G,I | A-B | J,K | A-P |

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|--|---------|-----|-----|---------|
| – Hypertensive crises - Myocarditis, Myocardial, and peripheral ischemia | | | | |
| Respiratory complications - Respiratory failure - Pneumonitis – ARDS - Pulmonary edema (Cardiogenic and non-cardiogenic)and Acute bronchospastic conditions | A,F,G,I | A-B | J,K | A-P |
| Acid Base and Electrolytes imbalance | B,G | A-B | A-D | A-P |
| Geriatric toxicology | I | A-B | A-L | B-G,J-P |
| Pediatric toxicology | I | A-B | A-L | A-P |
| Pregnancy and poisoning | I | A-B | A-L | A-P |
| Multiple overdoses | A,B,I | A-B | A-L | A-P |
| Developmental toxicology | B,J | A-B | A | K |
| Industrial toxicology | D,J | A-B | A-L | A-P |
| Carcinogenesis – mutagenesis&teratogenesis | B,J | A-B | I,K | A-P |
| Environmental toxicology &pollution | D,J | A-B | A-L | A-P |
| Nephrotoxicity | A,B,F,G | A-B | A-L | A-P |
| Hepatotoxicity | A,B,F,G | A-B | A-L | A-P |
| Toxicity of hematological system | A,B,F,G | A-B | A-L | A-P |
| Immunotoxicity | A,B,F,G | A-B | A-L | A-P |
| Dermatotoxicology | A,B,F,G | A-B | A-L | A-P |
| Ophthalmic toxicology | A,B,F,G | A-B | A-L | A-P |
| Otolaryngeal toxicology | A,B,F,G | A-B | A-L | A-P |
| Reproductive toxicology | A,B,F,G | A-B | A-L | A-P |
| Gastrointestinal toxicology | A,B,F,G | A-B | A-L | A-P |
| Genitourinary toxicology | A,B,F,G | A-B | A-L | A-P |
| Biochemical &molecular basis of toxicology | A,D-I | A-B | A-L | A-P |
| Toxicokinetic & toxicokinetic basis of toxicology | A,B,I | A-B | - | A-P |
| Antidotes | G | A-B | E,F | A-P |
| Section (2) First aid of poisoning | | | | |
| Clinical Examination of acutely intoxicated Patient | E | A-B | A | A-P |

| | | | | |
|---|-------|-----|------------|-----|
| Criteria for Admission of Poisoning cases in ICU and Role of Analytical Toxicology, and imaging in ICU Management. | G | A-B | A-L | A-P |
| Decontamination Procedures: Emesis and Gastric Lavage and other elimination procedures (Types of Dialysis) | C,D,I | A-B | E-H | A-P |
| Antidote administration and Monitoring | G | A-B | E,F | A-P |
| Cardiopulmonary Resuscitation - Basic Life Support (BLS), and Advance Life Support (ALS) | C-D | A-B | F,K | A-P |
| Evaluation, causes and management of shock in poisoning: CVP, ECG, | A-I | A-B | A-F, I,K,L | A-P |
| Arrhythmias: Management in different intoxication states | A-I | A-B | A-F, I,K,L | A-P |
| Evaluation significance and management of ischemic heart and myocarditis in poisoning | A-I | A-B | A-F, I,K,L | A-P |
| Assessment of respiratory function: imaging, ABG, clinical data | A-I | A-B | A-F, I,K,L | A-P |
| Respiratory presentations in poisoning: Respiratory failure, Pneumonitis, bronchospastic conditions, Pulmonary edema (CPE – NCPE), ARDS, | A-I | A-B | A-I,,K,L | A-P |
| Oxygenation and aerosol therapy in acute poisoning states, Mechanical Ventilation: setting ventilation in different indication, different modalities, as PEEP, monitoring, calculations, weaning and troubleshooting in specific intoxication (Hydrocarbon, methanol, CO, Heroin lung, botulism etc.....) | C,D | A-B | A-L | A-P |

| | | | | |
|---|---------|-----|----------|-----|
| Clinical approach to the comatose patient. Differential diagnosis of metabolic, structural versus toxic coma. | A-I | A-B | A-I,,K,L | A-P |
| Seizures, agitation, delirium and confusional states: Causes and management in Toxicology | A-I | A-B | A-L | A-P |
| Assessment and Monitoring of renal function in critical care intoxicated patient | A,B,C,F | A-B | A-L | A-P |
| Coagulopathy (DIC). Monitoring and management | A,B,F | A-B | A-L | A-P |
| Acute hemorrhagic crises, and acute toxic bone marrow failure, Neutropenia, thrombocytopenia: Significance and management | A,B,F | A-B | A-L | A-P |
| Rhabdomyolysis | A,B,F | A-B | A-L | A-P |
| Access of central venous line | C,D | A-B | B-E | A-P |
| Enteral and Total Parenteral Nutrition | C,D | A-B | A-I,,K,L | A-P |
| Endoscopy of upper GIT in corrosives | F | A-B | F | A-P |
| ECG interpretation in Toxicology | A,F,G | A-B | C | A-P |
| Other emergency procedures: tracheotomy, insertion of chest tube in barotraumas or corroded lung lesions | A-G | A-B | A-F | A-P |
| Inappropriate pre-hospital management | D | A-B | A-D | A-P |
| Hospital Acquired Infection in ICU | B-I | A-B | G | A-P |
| Transportation of Critically Ill Patient | D | A-B | A-D | A-P |

Unit 2 Advanced Clinical Toxicology

| | | | | |
|---------------------------------------|-----|-----|-----|-----|
| Over the Counter drugs | A-F | A-J | A-I | A-E |
| Acetaminophen | | | | |
| Salicylates | | | | |
| Non Steroidal Anti-Inflammatory Drugs | | | | |

| | | | | |
|--|-----|-----|-----|-----|
| Anorexigenic drugs, Obesity Drugs | | | | |
| CNS stimulants and common cold medications | | | | |
| Drugs That Affect Sexual Function. | | | | |
| Antimicrobials | A-F | A-J | A-I | A-E |
| Cephalosporins and Penicillins | | | | |
| Macrolides | | | | |
| Quinolones | | | | |
| Aminoglycosides | | | | |
| Antituberculous drugs | | | | |
| Antiviral drugs | | | | |
| Antiprotozoal drugs (Antimalarials, Antiamebics and others) | | | | |
| Antifungal drugs | | | | |
| Central Nervous System Drugs | A-F | A-J | A-I | A-E |
| Antidepressants (TCA – SSRI) | | | | |
| Neuroleptics | | | | |
| Lithium | | | | |
| Sedatives hypnotics (Benzodiazepines, Barbiturates, Meprobamate, Zopiclone, zolpidem, Melatonin receptor, bromides, plant origin sedatives.) | | | | |
| Anxiolytics Others (Buspirone...) | | | | |
| Muscle relaxants Others (Baclofen, Carisoprodol, ...) | | | | |
| Antiepileptics | | | | |
| Respiratory Drugs | A-F | A-J | A-I | A-E |
| Theophylline and Xanthines | | | | |
| Beta2-adrenergic receptor agonist | | | | |
| Cardiovascular Drugs | A-F | A-J | A-I | A-E |
| Digitalis preparations | | | | |
| Beta blockers | | | | |
| Diuretics | | | | |
| Calcium Channel Blockers | | | | |
| Antiarrhythmics | | | | |
| Antihypertensives | | | | |
| Nitrates | | | | |
| Hyperlipidemia drugs | | | | |

| | | | | |
|---|-----|-----|-----|-----|
| Anti-platelets | | | | |
| Endocrine Drugs | A-F | A-J | A-I | A-E |
| Oral hypoglycemic drugs and Insulin | | | | |
| Steroids | | | | |
| Metals and salts | A-F | A-J | A-I | A-E |
| Lead | | | | |
| Mercury | | | | |
| Arsenic | | | | |
| Iron | | | | |
| Corrosives (Acids, Alkalis, chlorine) Chemicals | A-F | A-J | A-I | A-E |
| 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) | | | | |
| Petroleum distillates and hydrocarbons | | | | |
| Detergents, Dyes, food colors and preservatives | | | | |
| Food Poisoning (Bacterial, viral, chemical, endogenous...) | A-F | A-J | A-I | A-E |
| Botulism | | | | |
| Ciguatera, Paralytic shellfish. Scombroid, | | | | |
| Food allergy versus poisoning | | | | |
| Animal Envenomation | A-F | A-J | A-I | A-E |
| Scorpion | | | | |
| Snakes | | | | |
| Spider Bees and wasps and Marine(jelly fishetc) | | | | |

| Toxic Plants | A-F | A-J | A-I | A-E |
|--|-------|-------|---------|-----|
| Mushrooms | | | | |
| Mycotoxins, Houseplant | | | | |
| Atropine, Hyoscine (atropa belladonna & related plants) | | | | |
| Other hallucinogenic psychoactive plants (Nutmeg, khat, supari, valerian.) | | | | |
| Unit 3 Advanced studies in dependence and Illicit drugs | | | | |
| Mechanisms and theory of drug abuse: receptor toxicology | B,C | B | - | - |
| General basics of drug abuse | A&B | B | - | C,E |
| Treatment of Drug Dependence | G,H | A,C,J | A-H | A-E |
| Opiates, narcotics and tramadol | D,E | A-J | A-L | A-E |
| Benzodiazepines and sedatives hypnotics (Zopiclone, barbiturates, meprobamate and myorelaxants) | D,E | A-J | A-L | A-E |
| Alcohol abuse | D,E | A-J | A-L | A-E |
| Central stimulants: Cocaine, amphetamine, designer drugs, sympathomimetic and others | D,E | A-J | A-L | A-E |
| Cannabis | D,E | A-J | A-L | A-E |
| Solvent abuse | D,E | A-J | A-L | A-E |
| Potentially dependence producing drugs on the market | A,D,E | A-J | A-L | A-E |
| Other drugs of abuse: Research spirit | - | - | - | D |
| General examination of dependent patient in overdose and other dependence emergencies | E,F | - | A | A-E |
| Tailoring analytical toxicology for diagnosis and shaping profile of drug abuse and its role in relapses | J | C | D,F,G,H | A-E |
| Detoxification procedures | G,H | A-J | E | A-E |
| Monitoring ex drug abuser | H | - | F,H | A-E |
| Medical and Surgical Complications of drug dependence practice | F | A | A,D | A-E |
| New concepts in management | H | B | J | A-D |
| Medicolegal aspects of dependence | H,I | - | - | A-E |
| Ethical Considerations | H,I | F | E | C |

5. Course methods of teaching/learning:

1. Didactic (lectures, seminars, tutorial)
2. Outpatient
3. Inpatient
4. Clinical rounds
5. Clinical rotations
6. Service teaching
7. Direct observation
8. Post graduate teaching
9. Hand on workshops
10. Perform under supervision of senior staff
11. Simulations
12. Present a case (true or simulated) in a grand round
13. Case Taking
14. journal club,
15. Critically appraised topic,
16. Educational prescription
17. Observation & supervision
18. Written & oral communications

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:

i. Assessment tools:

- Clinical examination
- Written
- Oral examination
- Check list
- log book & portfolio
- Procedure/case presentation

- One MCQ examination in f the second year and one in the third year
- Objective structured clinical examination
- Check list evaluation of live or recorded performance
- Record review (report)
- Patient survey
- 360o global rating

ii. **Time schedule:** At the end of the second part

iii. **Marks:** 1200 marks (**600 marks for written+300 oral +300 for clinical and practical**)

8. List of references

i. Lectures notes

- Course notes
- Staff members print out of lectures and/or CD copies

ii. Essential books

- Handbook of medical toxicology, Peter Viccellio, Little, Brown and company,1993.
- Recommendations and Perspectives. Gullo and Lumbs
- Goldfrank Toxicologic emergencies, 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.
- Fundamentals of Mechanical Ventilation. Chatburn RL. Cleveland Ohio. Mandu Press
- Handbook of Drugs in Intensive Care:An A-Z Guide 3rd ed
- Intensive and Critical Care Medicine. Reflections, Recommendations and Perspectives. Gullo and Lumbs,2010.
- The ICU Book, by Paul L. Marino,Kalipatnapu N. Rao (2012): Forensic Toxicology: Medico-Legal Case Studies. 1st ed. CRC Press.
- Shannon M.W., boron S.W. and burns M. (2007): Haddad and Winchester's Clinical Management of Poisoning and Drug Overdose, 4th edition.

iii. Recommended books

- Ellenhorn Medical Toxicology. Williams and Wilkins,1997.

- Clinical Electrocardiography by Ary L. Goldberger ,1999.
- Textbook of Healthcare Ethics. 2nd Edition. Loewy, and Roberta Springer. Kluwer Academic Publishers,2005.
- Dreisbach's handbook of poisoning,13th edition,2017.
- Clinical Toxicology of commercial products,1984.
- Textbook of Healthcare Ethics. 2nd Edition. Loewy, and Roberta Springer. Kluwer Academic Publishers,2005.
- Clarke's analysis of drugs and poisons,2011.
- Drug Abuse Handbook: Steven Karch. CRC Press,4th edition, 2008.

iv. Periodicals, Web sites, ... etc

➤ Periodicals

- A cluster of databases on toxicology, hazardous chemicals and related areas. <http://toxnet.nlm.nih.gov/> Canadian Journal of Emergency Medicine. http://www.cma.ca/index.php/ci_id/15639/la_id/1.htm
- The Internet Journal of Emergency and Intensive Care Medicine. http://www.ispub.com/journal/the_internet_journal_of_emergency_and_intensive_care_medicine.html
- **BMC Emergency Medicine.** <http://www.biomedcentral.com/bmccemergmed>
- Urgence Pratique. <http://www.urgence-pratique.com/>
- Journal of Critical Care <http://www.elsevier.com/wps/find/journaldescription>.
- The European Society of intensive care Medicine journal. <http://icmjournal.esicm.org/index.html>
- The Internet Journal of Emergency and intensive Care Medicine. <http://www.isppub.com>
- Journal of Intensive Care Medicine. Tufts University school of Medicine. University of Massasuchetts. Medical School

➤ Web Sites:

- AAPCC is a nationwide organization of poison centers and interested individuals. <http://www.aapcc.org/>
- Database of photos, botanical information, and health information on poisonous plants. Contains links to other related sites <http://www.ansci.cornell.edu/plants/index.html>
- Martindale's pharmacy center for drug information. <http://www.martindalecenter.com/Pharmacy.html>

- Discussions, classes and reviews sponsored by The University of Illinois at Chicago. <http://www.uic.edu/com/er/toxikon>
- ECG library. <http://www.ecglibrary.com/>
- Very extensive menu of links to data on pharmaceuticals, biotechnology, and pharmaceutical companies. <http://pharminfo.com/phrmlink.html>
- A cluster of databases on toxicology, hazardous chemicals and related areas. <http://toxnet.nlm.nih.gov/> Canadian Journal of Emergency Medicine. http://www.cma.ca/index.php/ci_id/15639/la_id/1.htm
- latest news, updates and guidelines for emergency physicians. <http://www.acep.org/>
- Comprehensive collection of drugs of abuse. <http://www.streetdrugs.org/>
- Latest news, updates and guidelines for emergency physicians. <http://www.acep.org/>
- Comprehensive collection of drugs of abuse. <http://www.streetdrugs.org/>
- Access to Martindale's pharmacy center for drug information. <http://www.martindalecenter.com/Pharmacy.html>
- www.ersnet.org, www.ERS-education.org,
- www.erj.ersjournals.com, <http://err.ersjournals.com>
- <http://www.ncbi.nlm.nih.gov/pubmed/>

v. Others

- None

9. Signatures

| | |
|----------------------------|--------------------------------|
| Course Coordinator | |
| Course Coordinator: | Head of the Department: |
| Date: | Date: |

ANNEX 2

Program Academic Reference Standards (ARS)

1- Graduate attributes for medical doctorate in Clinical Toxicology

The Graduate (after residence training and medical doctorate years of study) must:

- 1-** Demonstrate competency and mastery of basics, methods and tools of scientific research and clinical audit in Clinical Toxicology
- 2-** Have continuous ability to add knowledge to Clinical Toxicology through research and publication.
- 3-** Appraise and utilise relevant scientific knowledge to continuously update and improve clinical practice.
- 4-** Acquire excellent level of medical knowledge in the basic biomedical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care and scientific research.
- 5-** Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health problems and health promotion.
- 6-** Identify and create solutions for health problems in Clinical Toxicology
- 7-** Acquire an in depth understanding of common areas of Clinical Toxicology, from basic clinical care to evidence based clinical application, and possession of required skills to manage independently all problems in these areas.

- 8-** Demonstrate leadership competencies including 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.
- 9-** Function as teacher in relation to colleagues, medical students and other health professions.
- 10-** Master decision making capabilities in different situations related to Clinical Toxicology.
- 11-** Show leadership 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.
- 12-** Demonstrate in depth awareness of public health and health policy issues including independent ability to improve health care, and identify and carryout system-based improvement of care.
- 13-** Show model attitudes and professionalism.
- 14-** Demonstrate commitment for lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages and in Clinical Toxicology or one of its subspecialties.
- 15-** Use recent technologies to improve his practice in Clinical Toxicology
- 16-** Share in updating and improving clinical practice in Clinical Toxicology.

2- Competency based Standards for medical doctorate in Clinical Toxicology

22.1- Knowledge and understanding

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

- 2-1-A-** Established, updated and evidence- based theories, basics and developments of Clinical Toxicology and relevant sciences.
- 2-1-B-** Basics, methods and ethics of medical research.
- 2-1-C-** Ethical and medicolegal principles of medical practice related to Clinical Toxicology.
- 2-1-D-** Principles and measurements of quality in Clinical Toxicology.
- 2-1-E-** Principles and efforts for maintainance and improvements of public health.

2- Intellectual skills

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

- 2-2-A-** Application of basic and other relevant science to solve Clinical Toxicology related Problems.
- 2-2-B-** Problem solving based on available data.
- 2-2-C-** Involvement in research studies related to Clinical Toxicology.
- 2-2-D-** Writing scientific papers.
- 2-2-E-** Risk evaluation in the related clinical practice.
- 2-2-F-** Planning for performance improvement in Clinical Toxicology.
- 2-2-G-** Creation and innovation in Clinical Toxicology.
- 2-2-H-** Evidence – based discussion.
- 2-2-I-** Decision making in different situations related to Clinical Toxicology.

2.3- Clinical skills

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

+ Competency-based outcomes for Patient Care: -

2-3-A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in Clinical Toxicology.

2-3-B- Master patient care skills relevant to Clinical Toxicology for patients with all diagnoses and procedures.

2-3-C- Write and evaluate reports for situations related to the 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- Master 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 competently all information sources and technology to improve his practice.

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

+ Competency-based objectives for Interpersonal and Communication Skills

2-4-D- Master 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-Master Professionalism behavior, 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- Participate in improvement of the education system.

2-4-H- Demonstrate skills of leading scientific meetings including time management

2-4-O- 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 MD 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 MD students 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 MD 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 MD doctor’s performance on checklists and provide feedback for history taking, physical examination, and communication skills. Physicians may also rate the MD doctor’s performance.
- ❖ Objective Structured Clinical Examination (OSCE) – A series of stations with standardized tasks for the MD doctors to perform. Standardized patients and other assessment methods often are combined in an OSCE. An observer or the standardized patient may evaluate the MD doctors.
- ❖ Procedure or Case Logs – MD 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 MD 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 – MD doctors, faculty, nurses, clerks, and other clinical staff evaluate MD doctors from different perspectives using similar rating forms.
- ❖ Portfolios – A portfolio is a set of project reports that are prepared by the MD doctors to document projects completed during the MD 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 – MD 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 MD 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:

مصنوفة توافق المعايير القومية القياسية العامة لبرامج الدكتوراه مع المعايير الأكاديمية المعتمدة من
كلية الطب □ جامعة أسيوط لدرجة الدكتوراه السمووم الإكلينيكية

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

1- Graduate attributes

| Faculty ARS | NAQAAE General ARS for postgraduate Programs |
|---|---|
| 1- Demonstrate competency and mastery of basics, methods and tools of scientific research and clinical audit in Clinical Toxicology. | 1- إتقان أساسيات و منهجيات البحث العلمي |
| 2- Have continuous ability to add knowledge new developments to Clinical Toxicology through research and publication. | 2- العمل المستمر علي الإضافة للمعارف في مجال التخصص |
| 3- Appraise and utilise scientific knowledge to continuously update and improve clinical practice and relevant basic sciences. | 3- تطبيق المنهج التحليلي والناقد للمعارف في مجال التخصص و المجالات ذات العلاقة |
| 4- Acquire excellent level of medical knowledge in the basic biomedical, clinical, behavioural and clinical sciences, medical ethics and medical jurisprudence and apply such knowledge in patient care and scientific | 4- دمج المعارف المتخصصة مع المعارف ذات العلاقة مستتبطا و مطورا للعلاقات البينية بينها |
| 5- Function as a leader of a team to provide patient care that is appropriate, compassionate for dealing effective and with health Problems and health promotion. 7- Acquire an in depth understanding of common areas of speciality, from basic clinical care to evidence based clinical application, and possession of skills to manage independently all problems in these areas. | 5- إظهار وعيا عميقا بالمشاكل الجارية و النظريات الحديثة في مجال التخصص |
| 6- Identify and create solutions for health problems in Clinical Toxicology. | 6- تحديد المشكلات المهنية و إيجاد حلولاً مبتكرة لحلها |
| 5- Function as a leader of a team to provide patient care that is appropriate, | 7- إتقان نطاقا واسعا من المهارات المهنية في |

| | |
|---|--|
| <p>effective and compassionate for dealing with health problems and health promotion.</p> <p>7- Acquire an in depth understanding of common areas of Clinical Toxicology, from basic clinical care to evidence based clinical application, and possession of skills to manage independently all problems in these areas.</p> | <p>مجال التخصص</p> |
| <p>16- Share in updating and improving clinical practice in Clinical Toxicology.</p> <p>9- Function as teacher in relation to colleagues, medical students and other health professions.</p> | <p>8- التوجه نحو تطوير طرق و أدوات و أساليب جديدة للمزاولة المهنية</p> |
| <p>15- Use recent technologies to improve his practice in Clinical Toxicology.</p> | <p>9- استخدام الوسائل التكنولوجية المناسبة بما يخدم ممارسته المهنية</p> |
| <p>8- Demonstrate leadership competencies including 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>5- Function as a leader of a team to provide patient care that is appropriate, effective and compassionate for dealing with health problems and health promotion.</p> | <p>10- التواصل بفاعلية و قيادة فريق عمل في سياقات مهنية مختلفة</p> |
| <p>10- Master decision making capabilities in different situations related to Clinical Toxicology</p> | <p>11- اتخاذ القرار في ظل المعلومات المتاحة</p> |
| <p>11- Show leadership 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>12- توظيف الموارد المتاحة بكفاءة و تتميتها والعمل على إيجاد موارد جديدة</p> |

| | |
|--|---|
| <p>12- Demonstrate in depth awareness of public health and health policy issues including independent ability to improve health care, and identify and carryout system-based improvement of care.</p> | <p>13- الوعي بدوره في تنمية المجتمع والحفاظ على البيئة</p> |
| <p>13- Show model attitudes and professionalism.</p> | <p>14- التصرف بما يعكس الالتزام بالنزاهة و المصداقية و قواعد المهنة</p> |
| <p>14- Demonstrate commitment for lifelong learning and maintenance of competence and ability for continuous medical education and learning in subsequent stages and in Clinical Toxicology or one of its subspecialties.</p> <p>15- Use recent technologies to improve his practice in Clinical Toxicology.</p> | <p>15- الالتزام بالتنمية الذاتية المستمرة و نقل علمه و خبراته للآخرين</p> |

2- Academic standards

| Faculty ARS | NAQAAE General ARS for postgraduate Programs |
|--|--|
| 2.1. A- Established, updated and evidence- based theories, basics and developments of Clinical Toxicology. | 2-1-1-أ- النظريات و الأساسيات والحديث من المعارف في مجال التخصص والمجالات ذات العلاقة |
| 2.1. B- Basic, methods and ethics of medical research. | 2-1-2-ب- أساسيات و منهجيات و أخلاقيات البحث العلمي و أدواته المختلفة |
| 2.1. C- Ethical and medicological principles of medical practice related to Clinical Toxicology. | 2-1-2-ج- المبادئ الأخلاقية و القانونية للممارسة المهنية في مجال التخصص |
| 2.1. D- Principles and measurements of quality in Clinical Toxicology. | 2-1-2-د- مبادئ و أساسيات الجودة في الممارسة المهنية في مجال التخصص |
| 2.1. E- Principles and efforts for maintains and improvements of public health. | 2-1-2-هـ- المعارف المتعلقة بآثار ممارسته المهنية على البيئة وطرق تنمية البيئة وصيانتها |
| 2.2. A- Application of basic and other relevant science to solve Clinical Toxicology related problems. | 2-2-أ- تحليل و تقييم المعلومات في مجال التخصص و القياس عليها و الاستنباط منها |
| 2.2.B- Problem solving based on available data. | 2-2-ب- حل المشاكل المتخصصة استنادا علي المعطيات المتاحة |
| 2.2.C- Involvement in research studies related to Clinical Toxicology. | 2-2-ج- إجراء دراسات بحثية تضيف إلى المعارف |
| 2.2. D- Writing scientific papers. | 2-2-د- صياغة أوراق علمية |
| 2.2. E- Risk evaluation in the related clinical practice. | 2-2-هـ- تقييم المخاطر في الممارسات المهنية |
| 2.2.F- Planning for performance improvement in Clinical Toxicology. | 2-2-و- التخطيط لتطوير الأداء في مجال التخصص |
| 2-2-G- Creation and innovation in the Clinical Toxicology . | 2-2-ز- الابتكار /الإبداع |

| | |
|--|--|
| 2.2. H- Evidence – based discussion. | 2-2-ح- الحوار والنقاش المبني علي البراهين والأدلة |
| 2.2.I- Discussion making in different situations related to Clinical Toxicology. | 2-2-ط -اتخاذ القرارات المهنية في سياقات مهنية مختلفة |
| 2.3. A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in Clinical Toxicology. 2.3. B- Master patient care skills relevant to Clinical Toxicology or patients with all diagnoses and procedures. | 2-3-أ - إتقان المهارات المهنية الأساسية و الحديثة في مجال التخصص |
| 2.3. C- Write and evaluate reports for situations related to the field of Clinical Toxicology. | 2-3-ب- كتابة و تقييم التقارير المهنية. |
| 2.4.A-Master 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 | 2-3-ج -تقييم و تطوير الطرق و الأدوات القائمة في مجال التخصص |
| 2.4.B- Use competently all information sources and technology to improve his practice. | 2-3-د - استخدام الوسائل التكنولوجية بما يخدم الممارسة المهنية |
| 2.4.A-Master 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.G- Participate in improvement of the education system. | 2-3-هـ -التخطيط لتطوير الممارسة المهنية وتنمية أداء الآخرين |

II-Program ARS versus program ILOs

Comparison between ARS- ILOS for medical doctorate for Clinical Toxicology

| (ARS) | (ILOs) |
|---|---|
| <u>2-1- Knowledge and understanding</u> | <u>2-1- Knowledge and understanding</u> |
| 2-1-A- Established, updated and evidence-based Theories, Basics and developments of Clinical Toxicology and relevant sciences. | 2-1-A- Demonstrate in-depth knowledge and understanding of theories, basics and updated biomedical, clinical epidemiological and socio behavioral science relevant to his specialty as well as the evidence – based application of this knowledge to patient care. |
| 2-1-B Basic, methods and ethics of medical research. | 2-1-B- Explain basics, methodology, tools and ethics of scientific medical, clinical research. |
| 2-1-C- Ethical and medicological principles of medical practice related to Clinical Toxicology field. | 2-1-C- Mention ethical, medico logical principles and bylaws relevant to his practice in the field of Clinical Toxicology. |
| 2-1-D- Principles and measurements of quality in the Clinical Toxicology field. | 2-1-D- Mention principles and measurements of quality assurance and quality improvement in medical education and in clinical practice of Clinical Toxicology. |
| 2-1-E- Principles and efforts for maintains and improvements of public health. | 2-1-E- Mention health care system, public health and health policy, issues relevant to this specialty and principles and methods of system – based improvement of patient care in common health problems of the field of Clinical Toxicology |
| <u>2-2- Intellectual skills:</u> | <u>ctual skills:</u> |

| | |
|--|--|
| 2-2-A- Application of basic and other relevant science to solve Clinical Toxicology related problems. | 2-2-A- Apply the basic and clinically supportive sciences which are appropriate to Clinical Toxicology related conditions / problem / topics. |
| 2-2-B- Problem solving based on available data. | 2-2-B- Demonstrate an investigatory and analytic thinking “problem – solving “approaches to clinical situation related to Clinical Toxicology |
| 2-2-C- Involvement in research studies related to the Clinical Toxicology . | 2-2-C- Plan research projects. |
| 2-2-D Writing scientific papers. | 2-2-D- Write scientific paper. |
| 2-2-E- Risk evaluation in the related clinical practice. | 2-2-E- Participate in clinical risk management as a part of clinical governance. |
| 2-2-F- Planning for performance improvement in the Clinical Toxicology. | 2-2-F- Plan for quality improvement in the field of medical education and clinical practice in Clinical Toxicology.. |
| 2-2-G- Creation and innovation in the specialty field. | 2-2-G- Create / innovate plans, systems, and other issues for improvement of performance in his practice. |
| 2-2-H- Evidence – based discussion. | 2-2-H- Present and defend his / her data in front of a panel of experts. |
| 2-2-I- Decision making in different situations related to Clinical Toxicology fields. | 2-2-I- Formulate management plans and alternative decisions in different situations in the field of the Clinical Toxicology. |

| continuous (ARS) | continuous (ILOs) |
|---|---|
| <p><u>2-3- Clinical skills:</u></p> <p>2-3-A- MD students must be able to provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health extensive level means in depth understanding and from basic science to evidence – based clinical application and possession of skills to manage independently all problems in his field of practice.</p> <p>2-3-B- Master patient care skills relevant to clinical toxicology for patients with all diagnoses and procedures.</p> | <p><u>2/3/1/Practical skills (Patient care :)</u></p> <p>2-3-1-A- Provide extensive level of patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. <i>p.s.</i> Extensive level means in-depth understanding from basic science to evidence – based clinical application and possession of skills to manage independently all problems in field of practice.</p> <p>2-3-1-B- Provide extensive level of patient care for patients with all common diagnoses and for uncomplicated procedures related to clinical toxicology</p> <p>2-3-1-C- Provide extensive level of patient care for non-routine, complicated patients and under increasingly difficult circumstances, while demonstrating compassionate, appropriate and effective care.</p> <p>2-3-1-D- Perform diagnostic and therapeutic procedures considered essential in the field of Clinical Toxicology</p> <p>2-3-1-E- Handles unexpected complications, while demonstrating compassion and sensitivity to patient needs and concerns.</p> <p>2-3-1-F- Communicate effectively and demonstrate caring and respectful behaviors when interacting with patients and their families in the Clinical Toxicology related situations.</p> |

2-3-1-G- Gather essential and accurate information about patients of the Clinical Toxicology related conditions.

2-3-1-H Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence and clinical judgment for the Clinical Toxicology related conditions.

2-3-1-I- Develop and carry out patient management plans for Clinical Toxicology related conditions.

2-3-1-J- Counsel and educate patients and their families about Clinical Toxicology related conditions.

2-3-1-K- Use information technology to support patient care decisions and patient education in all Clinical Toxicology related clinical situations.

2-3-1-L- Perform competently all medical and invasive procedures considered essential for the Clinical Toxicology related conditions / area of practices.

2-3-1-M- Provide health care services aimed at preventing the Clinical Toxicology related health problems.

2-3-1-N- Lead health care professionals, including those from other disciplines, to provide patient-focused care in Clinical Toxicology related conditions.

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| <p>2-3-C- Write and evaluate reports for situations related to the field of Clinical Toxicology.</p> | <p>2-3-1-O- Write competently all forms of patient charts and sheets including reports evaluating these charts and sheets.(Write and evaluate a consultation note, Inform patients of a diagnosis and therapeutic plan, completing and evaluating comprehensive timely and legible medical records).</p> |
| <p><u>2-4- General skills</u></p> <p>2-4-A- Master 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- Demonstrate the competency of continuous evaluation of different types of care provision to patients in the different area of Clinical Toxicology</p> <p>2-3-2-B- Appraise scientific evidence.</p> <p>2-3-2-C- Continuously improve patient care based on constant self-evaluation and <u>life-long learning.</u></p> <p>2-3-2-D. Participate in clinical audit and research projects.</p> <p>2-3-2-E- Practice skills of evidence-based Medicine (EBM).</p> <p>2-3-2-G- Design logbooks.</p> <p>2-3-2-H- Design clinical guidelines and standard protocols of management.</p> <p>2-3-2-I- Appraise evidence from scientific studies related to the patients' health problems.</p> |

| | |
|---|---|
| <p>2-4-B- Use competently all information sources and technology to improve his practice.</p> | <p>2-3-2-J- Apply knowledge of study designs and statistical methods to the appraisal of clinical studies.</p> <p>2-3-2-K- Use information technology to manage information, access on-line medical information; for the important topics.</p> |
| <p>2-4-C- Master skills of teaching and evaluating others.</p> | <p>2-3-2-F- Educate and evaluate students, residents and other health professionals.</p> |
| <p>2-4-D- Master 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-L- Master interpersonal and communication skills that result in the effective <u>exchange of information and collaboration</u> with patients, their families, and health professionals, including:-</p> <ul style="list-style-type: none"> • <u>Present</u> a case. • <u>Write</u> a consultation note. • <u>Inform patients</u> of a diagnosis and therapeutic plan Completing and maintaining comprehensive. • Timely and legible <u>medical records</u>. • Teamwork skills. <p>2-3-2-M- Create and sustain a therapeutic and ethically sound relationship with patients.</p> <p>2-3-2-N- Elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills.</p> <p>2-3-2-O- Work effectively with others as a member or leader of a health care team or other professional group.</p> |
| <p>2-4-E- Master Professionalism behavior, as manifested through a commitment to carrying out professional responsibilities,</p> | <p>2-3-2-P- Demonstrate respect, compassion, and integrity; a responsiveness to the needs of patients and society.</p> |

| | |
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| <p>adherence to ethical principles, and sensitivity to a diverse patient population.</p> | <p>2-3-2-Q- Demonstrate a commitment to ethical principles including provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices.</p> <p>2-3-2-R- 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>2-4-G- Participate in improvement of the education system.</p> | <p>2-3-2-S- Work effectively in health care delivery settings and systems related to Clinical Toxicology including good administrative and time management.</p> <p>2-3-2-T- Practice cost-effective health care and resource allocation that does not compromise quality of care.</p> <p>2-3-2-U- Advocate for quality patient care and assist patients in dealing with system complexities.</p> <p>2-3-2-V- Design, monitor and evaluate specification of under and post graduate courses and programs.</p> |
| <p>2-4-H- Demonstrate skills of leading scientific meetings including time management</p> | <p>2-3-2-W- Act as a chair man for scientific meetings including time management</p> <p>2-3-2-S- Work effectively in health care delivery settings and systems related to Clinical Toxicology including good administrative and time management.</p> |
| <p>2-4-O- Demonstrate skills of self and contin learning .</p> | <p>From A to H</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 |
| Course 1 : Medical statistics | | ✓ | | | |
| Course 2 : Research Methodology | | ✓ | | | |
| Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research | | | ✓ | | |
| Course 4: Planning of Toxicological Studies. | | ✓ | | | |
| Course 5: Intensive Care for Poisoning Cases. | | | ✓ | | |
| Course 6: Toxicological and Biochemical Analysis. | ✓ | | | | |
| Course 7 : "Clinical Toxicology" | ✓ | ✓ | ✓ | ✓ | ✓ |

Intellectual

| Course | Program covered ILOs | | | | | | | | |
|--|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 2/2/A | 2/2/B | 2/2/C | 2/2/D | 2/2/E | 2/2/F | 2/2/G | 2/2/H | 2/2/I |
| Course 1 : Medical statistics | | | ✓ | ✓ | | | | ✓ | |
| Course 2 : Research Methodology | | | ✓ | ✓ | | | | ✓ | |
| Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research | | | | | | | | ✓ | |
| Course 4: Planning of Toxicological Studies. | ✓ | ✓ | | | | | | | |
| Course 5: Intensive Care for Poisoning Cases. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Course 6: Toxicological and Biochemical Analysis. | ✓ | | | | | | | ✓ | |
| Course 7 : "Clinical Toxicology Tuberculosis 2" | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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 : Medical statistics | | | | | | | | |
| Course 2 : Research Methodology | | | | | | | | |
| Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research | | | | ✓ | | | | ✓ |
| Course 4: Planning of Toxicological Studies. | | | | | | | | |
| Course 5: Intensive Care for Poisoning Cases. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Course 6: Toxicological and Biochemical Analysis. | | | | ✓ | | | | |
| Course 7 : Clinical Toxicology | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Practical Skills (Patient Care)

| Course | Program covered ILOs | | | | | | |
|--|----------------------|---------|---------|---------|---------|---------|---------|
| | 2/3/1/I | 2/3/1/J | 2/3/1/K | 2/3/1/L | 2/3/1/M | 2/3/1/N | 2/3/1/O |
| Course 1 : Medical statistics | | | | | | | |
| Course 2 : Research Methodology | | | | | | | |
| Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research | ✓ | ✓ | | | | | |
| Course 4: Planning of Toxicological Studies. | | | ✓ | | | | ✓ |
| Course 5: Intensive Care for Poisoning Cases. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Course 6: Toxicological and Biochemical Analysis. | ✓ | ✓ | | | | | |
| Course 7 : "Clinical Toxicology" | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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 : Medical statistics | | ✓ | | | | | | |
| Course 2 : Research Methodology | | ✓ | | ✓ | ✓ | | | |
| Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research | | | | | | | | |
| Course 4: Planning of Toxicological Studies. | | ✓ | | ✓ | ✓ | | | |
| Course 5: Intensive Care for Poisoning Cases. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Course 6: Toxicological and Biochemical Analysis. | | ✓ | | | ✓ | | | |
| Course 7: Clinical Toxicology | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

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 | 2/3/2/P |
| Course 1 : Medical statistics | ✓ | ✓ | ✓ | | | | | |
| Course 2 : Research Methodology | ✓ | ✓ | | | | | | |
| Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research | | | | ✓ | | | | |
| Course 4: Planning of Toxicological Studies. | | ✓ | | ✓ | | ✓ | | |
| Course 5: Intensive Care for Poisoning Cases. | | | | ✓ | | | | |
| Course 6: Toxicological and Biochemical Analysis. | | | ✓ | ✓ | | ✓ | | |
| Course 5 : Clinical Toxicology | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

General Skills

| Course | Program covered ILOs | | | | | | |
|--|----------------------|---------|---------|---------|---------|---------|---------|
| | 2/3/2/Q | 2/3/2/R | 2/3/2/S | 2/3/2/T | 2/3/2/U | 2/3/2/V | 2/3/2/W |
| Course 1 : Medical statistics | | | | | | | |
| Course 2 : Research Methodology | | | | | | | |
| Course 3 : Medicolegal Aspects and Ethics in Medical Practice and Scientific Research | | | | | | | |
| Course 4: Planning of Toxicological Studies. | ✓ | | | ✓ | | | |
| Course 5: Intensive Care for Poisoning Cases. | ✓ | | ✓ | | | | |
| Course 6: Toxicological and Biochemical Analysis. | ✓ | | ✓ | | | | |
| Course 5 : clinical Toxicology | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Annex 7,
Additional information:

Department information

Equipments and Specialized Units:

- Clinical Toxicology and Forensic Chemistry Lab
- Scientific Library (Clinical Books and periodicals), MD, MSc thesis,
- Seminar room with data show
- Electronic Library of Scientific Seminars, case presentations.
- Data base filing of all the cases, procedures and out patient clinic data.

Staff members

Head of the Department: Prof Randa Hussein Abdel-Hady

Prof Nassef Nageh Zaki

Prof Abdel-Wahab Abdel-Karim Dawood

Prof Sawsan Abdel-Aziz Elsharkawy

Prof Afaf Mohamed Ahmed Farghaly

Prof Nahed A Abdel-Hamid

Prof Ragaa Mohamed Abdel-Maaboud

Prof Hala Mohamed Fathy Ahmed

Prof Wafaa Mohamed Abdel-Monim

Prof Khaled Mohamed Abd EL-Aal

Prof Zaghloul Thabet Mohamed

Prof Saly Yehia Abd-El Hamid

Prof Hayam Zakaria Thabet

Prof Aml Ali Mohamed Ali

Prof Safaa Maher George

Dr Nagwa Mahmoud Ali Ghandour

Dr Ghada Ali Farghali Omran

Dr Heba Atia yassa

Dr Nora Zeidan Abdellah

Dr Doaa Muhammed Abdellrahman

Dr Eman Salah-Eldin Gaber

Opportunities within the department

- Clinical Toxicology and Forensic Chemistry Lab
- Scientific Library
- Seminar room with data show
- Electronic Library of Scientific Seminars, case presentations.
- Data base filing of all the cases, procedures and out patient clinic data.

Department quality control insurance for completing the program

- + Evaluation by the Department head and staff members.
- + Regular assessments.
- + Log book monitoring.
- + Recent equipments and Specialized Units.

(End of the program specifications)