اللائحة الداخلية لبرنامج دبلوم السموم والتحليل الكيميائي الشرعي

بكلية الصيدلة جامعة الزقازيق

مادة (١)

تسرى مواد و احكام اللائحة التنظيمية لبرامج الدراسات العليا بكلية الصيدلة جامعة الزقازيق على اللائحة الداخلية لبرنامج دبلوم السموم والتحليل الكيميائي الشرعي بكلية الصيدلة جامعة الزقازيق بالإضافة إلى المواد الخاصة التالية

مادة (٢) الإشراف

يتولى قسم علم الأدوية والسموم بكلية الصيدلة - جامعة الزقازيق الاشراف العلمي على تدريس المقررات والمشروع البحثى والتدريب وغيرها من الأمور الاكاديمية ذات الصلة.

مادة (٣) القبول والقيد
بالإضافة إلى خريجي كليات الصيدلة بجوز قبول خريجي كليات الطب

مادة (٤) الخطة الدراسية

تحدد الجداول التالية عدد المقررات الدراسية والساعات المعتمدة لكل مقرر و متطلبات التسجيل لكل مقرر دراسي وكذلك مشروع التخرج والتدريب وباقي تفاصيل الخطة الدراسية

Courses of Diploma of Toxicology and Forensic Chemical Analysis

جدول ١: الفصل الدراسي الأول (١٤ ساعة معتمدة)

#	Course code	Course title	Credit hours			Assessment			
			Lecture	Tutorial/ practical	Total	Written	Practical	Activity	Oral
1	DTF101	Environmental & occupational toxicology	2	1	3	50	20	15	15
2	DTF102	Laws and legislation	1	0	1	60	----	25	15
3	DTF103	Forensic toxicology	2	1	3	50	20	15	15
4	DTF104	Household toxicology	١	1	2	50	20	15	15
5	DTF105	Postmortem toxicology	2	1	3	50	20	15	15
6	DTF106	Elective course-1	١	1	2	50	20	15	15
Total credit hours			9	5	14				

جدول ٢: الفصل الدراسي الثاني (١٦ ساعة معتمدة)

#	Course code	Course title	Credit hours			Assessment			
			Lecture	Tutorial/	Total	Written	Practical	Activity	Oral

				practical					
7	DTF207	Analytical toxicology	2	1	3	50	20	15	15
8	DTF208	Forgery	1	1	2	50	20	15	15
9	DTF209	Drug abuses and doping	2	1	3	50	20	15	15
10	DTF210	Toxicology information for the public	1	1	2	50	20	15	15
11	DTF211	Crime scene investigations	2	1	3	50	20	15	15
12	DTF212	Elective course-2	1	1	2	50	20	15	15
Total Credit Hours			9	6	15				

Elestive Courses -1: Molecular toxicology; Advanced analytical toxicology.

Elective Courses-2: Applied toxicology: Impact of fire, weapons and explosives.

Research project: 1 credit hour: Assessment: Supervisor evaluation: report 1 (4th week ; 20%) ; report 2 (10th week 30%) ; Final project discussion and presentation 12th week (evaluation committel: 50%).

Course contents:

1) Environmental & Occupational Toxicology (DTF101):

Environmental toxicology includes the study of toxicology of environmental pollutants in air, dust, sediment, soil, water, and natural toxins in the environment. Topics include toxic or biologically disruptive impacts of pharmaceuticals, industrial organics, agricultural chemicals, and by-products such as chlorinated compounds from water disinfection and waste incineration, natural toxins and their impacts. It also includes studying of the biotransformation and metabolism of toxigenic compounds, food chains for toxin accumulation or biodegradation; assays of toxicity, endocrine disruption, mutagenicity, carcinogenicity, ecosystem impact and health hazard; and environmental and public health risk assessment, environmental guidelines, environmental policy for toxicants. Occupational toxicology includes study of the toxicity of chemicals found in workplace. Industrial workers are exposed to these agents during the synthesis, manufacturing, or packaging of substances

2) Laws and legislations (DTF102):

قانون الصيدلة المتعلق بالأدوية المؤثرة على الحالة النفسية ,القانون الجنائي المتعلق بالمواد المخدرة , الاجراءات القانونية لاست لام الأحراز و تحليلها ,كتابة التقارير الرسمية ,الخطوات المتبعة لحفظ الأحراز و كيفية التخلص من الكميات المتبقية بعد اجراء التحاليل اللازمة ,القوانين و الاجراءات الأخرى المتبعة بمراكز السموم و هيئة الطب الشرعي.

3) Forensic toxicology (DTF103):

Forensic toxicology is a multidisciplinary field involving the detection and interpretation of the presence of drugs and other potentially toxic compounds in bodily tissues and fluids. These analyses and interpretations are conducted in a manner to be defensible in court. Forensic toxicology continues to be a dynamic field with evolving technology applications. Principle guidelines of forensic toxicology, new psychoactive substances (NPS) and drugs facilitated sexual assaults (DFSA), general laboratory techniques used in forensic toxicology, analytical probing, and applications of forensic toxicology. In addition, it includes specimen preparation and extraction, forensic identification and confirmation, interpretation of toxicology results and reporting the results.

4) Household Toxicology (DTF104) :

Description of poisons encountered in house including food toxicity, common drug classes found in house and cosmetics and other probable causes of household toxicity e.g. antifreeze, swallowing antifreeze (ethylene glycol) may cause damage to the heart, brain, kidney, and other internal organs, bleach, drain cleaners, carpet or upholstery cleaners, ammonia, air fresheners, asbestos, benzyl benzoate, bisphenol-a (bpa) and bisphenol-s (bps), dehp, endocrine disruptors, formaldehyde, lead, polybrominated diphenyl ethers (pbdes).

5) Postmortem toxicology (DTF105):

Pre-analytical considerations, prior medical therapy and medical intervention, analytical artifacts, organ/tissue retrieval, scene investigation, anatomical findings, unexpected drug/metabolites, endogenous compounds, drug instability, embalming artifacts, decomposition products, post mortem clinical chemistries, post mortem formation of alcohol and other compounds, post mortem redistribution, interpretive considerations of post mortem blood concentrations, drug interactions with foods and beverages, pharmacokinetics and metabolism, specimen type and usefulness, antemortem specimen.

6) Elective course-1 (DTF 106):

1. Molecular toxicology:

The molecular toxicology emphasis area focuses on investigating how, why, and when chemicals cause harm to life such as affecting cellular and molecular processes that lead to toxicity or cancer. Ultimately, the goal is to understand mechanisms of toxicity in precise molecular terms. What molecules are mediators? What are the downstream effectors? How does activation of gene expression by chemicals lead to the complex biology associated with disease? These chemical mediators and effectors are activated by small molecule toxicants but are bigger than those we have traditionally studied. Description of the kinetics of xenobiotics in vivo and ex vivo and general mechanisms of toxicity.

2. Advanced analytical toxicology:

It is concerned with the detection, identification, and measurement of drugs and other foreign compounds (xenobiotics) and their metabolites, and in some cases endogenous compounds, in biological and related specimens. Immunoassays have found wide application in analytical toxicology. A range of techniques, for example enzyme-multiplied immunoassay technique (EMIT) and cloned enzyme donor immunoassay (CEDIA), are available and are often highly sensitive. Sample preparation, differentiation/detection, and identification, in systematic toxicological analysis. It discusses the steps in undertaking an analytical toxicological

investigation, which can divide into pre-analytical, analytical, and post-analytical phases.

7) Analytical toxicology (DTF 207):

Role in general toxicology, classification of poisons, toxicological investigation of a poison death, criminal poisoning of the living, forensic drug testing, human performance testing, qualitative and quantitative analysis of organic and inorganic poisons, courtroom testimony, role in clinical toxicology, role in therapeutic monitoring, case history and specimens to toxicological analysis, interpretation of analytical results.

8) Forgery (DTF 208) :

أساليب التزييف و التزوير ,التوقعات المزورة ,خبير المستندات ,الفحص المبدئي للمستندات ,التوقيع على بيا ض ,الفرق بين أنواع احبار الطباعة ,اغتصاب التوقيعات بالاكراه ,المظاهرالخطية لحالات الاكتئاب ,الكشف عن التزوير الخاص بالسموم للجثث بعد الوفاة و طريقة الكشف عنها ,تزوير العملة و الكشف عنها ,قانون التوقيع الالكتروني المصري ,دراسة الأدوات و الطرق العلمية المستخدمة في كشف التزوير

9) Drug abuses and doping (DTF 209):

Abuse of stimulant: cocaine, Adderall (dextroamphetamine-amphetamine), methylphenidate, opioids, heroin, prescription painkillers, sedatives, alcohol, anabolic agents, beta-2 agonists, beta-blockers, blood manipulation, cannabinoids diuretics erythropoietin (epo), gene doping, glucocorticoids, gonadotropins, anabolics, hormone masking agents, narcotics, classification of seized drugs, mode of action and symptoms of narcotic drugs, analytical techniques of main drugs of abuse, adulteration, common reagents used in identification of narcotic drugs.

10) Toxicology information for the public (DTF 210):

Essential information to the public including target-organ toxicity, identification of potential health hazards resulting from exposure to certain chemical or biological agents, and the assessment and subsequent recommendations to abate or reduce any resulting health effects. To provide the scientific foundation in support of hazard identification, risk assessment, and standard setting, identify at-risk populations, and evaluate environmental risk to multiple aspects of human health including reproduction, pregnancy, pre- and postnatal development, and the cardiac, immune, nervous, and endocrine systems. The initial management which could qualify the candidates to work in poison information centers.

11) Crime Scene investigation (DTF 211):

The use of Physical evidence at the scene of the crime and the use of deductive and inductive reasoning to gain knowledge of the events surrounding the crime. Crime scene investigation involves a systematic search of the crime scene: meticulous observation and documentation of the scene, photography and sketching of the scene, the identification, processing and collection of physical evidence such as fingerprints, footwear impressions, hair, fibers, biological fluids, and materials for DNA analysis, blood stains, digital evidence, drug chemistry, evidence & witnesses, explosive, firearms, tire tracks, photography, questioned documents, procedure performed during crime scene investigation including inspection of accident sites, impact of fire, weapons and explosive. Also, the information collected from the different evidence types (blood, gunshots, hair, nail, semen, saliva,) will be discussed.

12) Elective Course-2 (DTD 212):

1. Applied toxicology:

Toxicology in select conditions including, doping in sports, teratogenicity, and recognizing the speed of progress in molecular toxicology coming from new knowledge in basic sciences and the wide changes in regulatory approaches to assess the safety of most products, food, and the environment.

2. Impact of fire, weapons, and explosives:

Fire department inspection, fire inspector role, explosive expert, determination of beginning of fire region, inspection of debris of fire region beginning, fire reasons, arsons – analysis of samples, polymers hazards result of tis fire, legality of fire reports, explosions: types, surveying of accidents: how to table samples, analysis – recognition of its type, amount.

Research project (DTF 213):

It is in an area related to toxicology and forensic chemical analysis sciences, supervised by an academic supervisor. This will involve the application of investigative, critical and analytical skills and the presentation of a report. Research skills in toxicology and forensic chemical analysis to be involved in research project and in some practical content. The research process, critical review skills, data collection and statistical analysis and laboratory skills and forensic chemical analysis. A detailed mini-thesis on a select topic related to toxicology/forensic chemistry will be prepared and presented- by each student.