

Jordan University of Science and Technology

Faculty of Medicine 2018-2019

COURSE TITLE : Forensic Medicine & Toxicology.
COURSE CODE: MED 416
CREDIT HOURS: 2.25 CREDIT HOURS
SEQUENCE: YEAR 4, 2 WEEKS
COURSE COORDINATOR: Dr. Ali Shotar
CONTACT : ashotar@just.edu.jo

Course Description:

Forensic terminology with emphasis on the understanding of the underlying pathology of traumatic and sudden, unexpected deaths encountered.

The course deals with medico-legal investigation of death and injury due to natural causes, accidents, and violence. It covers analysis/investigation of transportation injuries, of homicides, suicides due to various causes, and sexual crimes.

This course integrates basic and clinical science disciplines in one system-based course to compose a working knowledge of the principles of medical, scientific and technical evidence-gathering and the presentation of such evidence in the courts of law.

Course Learning Outcomes

1. Give a clear account of the procedures used in death investigation, the role of the Attorney General and the rules governing fatal accident inquiries.
2. Be able to describe the role and scope of the forensic toxicologist.
3. Be able to describe in general terms the working methods, instrumentation and diagnostic problems of the toxicological labs.

Recommended Textbooks and Atlases:

1. Simpson's Forensic Medicine by Bernard Knight 12th edition (2001).
2. Forensic Medicine by Bernard Knight 14th edition (2006).
3. Knight's Forensic Pathology 2015.

Learning Objectives

Lectures & Seminars objectives:

No.	Title	Objectives
1	Investigation of the Scene of Death/cirme	<ol style="list-style-type: none"> 1. know how the investigation of a scene of death is approached. 2. understand what constitutes evidence and how it should be preserved. 3. understand the importance and nature of documentation of evidence. 4. list and know the roles of the different specialist investigators at a scene of death. 5. appreciate the need to avoid cross-contamination of samples and the steps taken to avoid it.
2	Postmortem Changes	<ol style="list-style-type: none"> 1. know the methods by which the postmortem interval can be estimated and their limitations. 2. know the way in which the body cools after death, its rate of doing so and the factors which influence this. 3. know the nature and significance of hypostasis, cadaveric spasm, rigor mortis, putrefaction, mummification and adipoceros change and the rates at which these phenomena occur. 4. know the nature and significance of postmortem injury.
3	Sudden Natural Death	<ol style="list-style-type: none"> 1. have a clear knowledge of the body systems implicated in sudden natural death and the proportions of deaths attributable to disorders of each system. 2. know the major forms of disease which cause sudden natural death and the mechanisms by which they do so.
4	Common Injuries	<ol style="list-style-type: none"> 1. have a clear understanding of the way in which wounds are regarded in law and in medical practice 2. know the definition, mechanism and diagnostic significance of bruises, abrasions, lacerations, incised wounds, stab wounds and fractures and the factors which may modify them. 3. know the distinction between bite marks and oral suction Marks. 4. know the legal significance and medical methods of determining the degree of force used in inflicting an injury.
5	Firearm Injuries	<ol style="list-style-type: none"> 1. understand the basic principles on which modern firearms work and the major substances emitted by a gun when it fires 2. know the basic principles of determination of the range of fire in rifled and smoothbore firearms 3. know the basic distinguishing features of entry and

		<p>exit firearm wounds.</p> <p>4. know the basic principles on which determination of accidental, suicidal and homicidal firearm wounding is made.</p>
6	Road Traffic Accidents	<p>1. know the reasons for autopsy of road traffic victims</p> <p>2. know the major patterns of injuries in individuals injured in motor vehicle collisions.</p>
7	Child abuse & Family Violence	<p>a. Physical</p> <p>1. be able to define child abuse</p> <p>2. have a basic knowledge of the historical recognition of child abuse</p> <p>3. be able to list the major clinical, radiological and pathological signs, of physical child abuse</p> <p>4. be able to list the major natural conditions which may mimic child abuse</p> <p>5. be able to state the general strategy for dealing with child abuse</p>
8	Sexual Offences against Adults	<p>1. be able to define rape and other sexual offences under Jordan laws.</p> <p>2. be able to describe the procedure governing the medical examination of victims of alleged rape and the follow-up care needed</p> <p>3. be able to describe the procedure governing the medical examination of the alleged assailant in a case of rape.</p> <p>4. be able to describe the procedure governing the medical examination of a victim of alleged sodomy and Jordanian laws concerning it.</p>
9	Torture & Death in Custody	<p>1. appreciate the importance and the concern about such incidences by the public, media and families & the balanced ways of interacting of all parties concerned.</p> <p>2. to understand and follow methodical documenta-tion of injuries.</p> <p>3. scene investigation</p> <p>4. review the police records including all statements of persons who witnessed on event.</p>
10	Asphyxia	<p>1. understand clearly the concept of asphyxia both to lawyers and to medical practitioners, together with its legal significance</p> <p>2. know the general changes associated with asphyxia and the mechanisms by which they operate.</p> <p>3. know the main categories of asphyxial and related deaths and the circumstances which bring them about.</p>

11	Sudden Infant Death syndrome (SIDS)	<ol style="list-style-type: none"> 1. know a working approach & the incidence and distribution of SIDS and recent trends in its occurrence 2. be able to list the major causes of sudden unexpected death in infancy 3. know the major risk factors for SIDS 4. know the main autopsy findings in SIDS 5. know the main current theories and hypotheses for the cause of SIDS
12	Drowning and Immersion	<ol style="list-style-type: none"> 1. know the different mechanisms of death which may have been involved when a body is recovered from immersion. 2. know the changes in the human body which occur in immersion 3. know the major tests which may be applied to support a diagnosis of drowning.
13	Therapeutic, Criminal abortion & Infanticide	<ol style="list-style-type: none"> 1. be able to define in simple terms fetus viability, abortion, stillbirth and infanticide. 2. know the major methods of illegal abortion and their likely complications. 3. know the main medical signs of live birth and stillbirth.
14	Carbon Monoxide Poisoning	<ol style="list-style-type: none"> 1. know the sources and nature of carbon monoxide gas and the mechanism by which it causes poisoning. 2. know the methods by which such poisoning is assessed and their limitations.
15	Alcohol-Ethanol	<ol style="list-style-type: none"> 1. know briefly the sources, absorption, metabolism and elimination of ethanol. 2. know the measurement of ethanol consumption in units. 3. know the effects of ethanol. 4. know the local and some foreign laws concerning drinking & driving. 5. understand the interpretation of clinical findings in relation to alcohol levels. 6. understand the alcohol related causes of death.
16	Heroin and Cocaine	<ol style="list-style-type: none"> 1. know the classification, , sources, types , routes of abuse and mechanism of action. 2. know the clinical features of toxicity, lab diagnosis, general treatment, antidotes and the causes of death.

Course Assessment

Evaluation and Distribution of Marks:

- Seminars and In-course evaluation=25%
- End rotation exam=30%
- Final written exam=45%

Student Learning Outcomes

To be able to appreciate both the scope and the limitations of medical and scientific investigation in assisting the courts.

Show a basic knowledge of the professional and ethical considerations governing everyday medical practice.

Intended Learning Outcomes (ILOs)

1. Construct, from basic scientific and other factual information supplied concerning a scene of death, a logically argued reconstruction of the events leading up to death, indicating what further investigations would be required for a full inquiry of this type and methods for identification and guidelines for quality control assurance.
2. Understand the way in which toxicological evidence is presented in court.