SUBJECT CARD

Faculty of Medicine and Health Sciences
Field of studies: Medicine
Form of studies: Full-time course
Degree: long-cycle Master's programme
Specializations: No specialization
Academic year: 2023/2024

FORENSIC MEDICINE AND INTRODUCTION TO FORENSIC SCIENCE	
SUBJECT NAME	**Forensic medicine and introduction to forensic science**
NUMBER OF ECTS POINTS	3
LANGUAGE OF INSTRUCTION	English
TEACHER(S)	dr hab. Krzysztof Woźniak dr Sebastian Rojek dr Tomasz Kupiec mgr Marta Barszcz
PERSON RESPONSIBLE	dr hab. Krzysztof Woźniak
NUMBER OF HOURS	
LECTURES	48 h
CLASSES	2 h
GENERAL OBJECTIVES	
OBJECTIVE 1	The aim of the course is to familiarize students with the scope of modern forensic medicine, its distinctiveness from clinical disciplines, and acquiring basic skills useful for a physician of any specialty.
LEARNING OUTCOMES	
MK1	**Knowledge:** Student knows and understands the concept of violent death and sudden death as well as the difference between the concepts of trauma and injury.
MK2	**Knowledge:** Student knows the legal regulations and rules of conduct of the physician during the examination of the corpse at the site of its disclosure; and medico-legal examination of the corpse.
MK3	**Knowledge:** Student knows the principles of medico-legal diagnostics and opinion giving in cases related to infanticide and the forensic medical reconstruction of a road accident.
MK4	**Knowledge:** Student knows the rules of forensic medical opinions regarding: the fitness to participate in procedural activities; biological effect and health damage.

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MK5	**Knowledge:** Student knows the forms of violence, models explaining violence in the family and in institutions, social background of different forms of violence and the physician's role in recognition.
MK6	**Knowledge:** Student understands the cultural, ethnic and national determinants of human behavior.
MK7	**Knowledge:** Student knows the basics of evidence-based medicine.
MK8	**Knowledge:** Student knows the issues of: abused child and sexual abuse, mental retardation, behavioral disorders: psychosis, addiction, eating and excretion disorders in children.
MK9	**Knowledge:** Student knows and understands the concept of disability, invalidity and a handicapped person.
MK10	**Knowledge:** Student knows the legal obligations of a doctor in the field of declaring death.
MK11	**Knowledge:** Student knows the concept of a medical error, the most common causes of medical errors and the rules for opinion giving in such cases.
MK12	**Knowledge:** Student knows the rules of collecting specimens for toxicological and hemogenetics analyses.
MS1	**Skills:** Student identifies risk factors for the occurrence of violence, recognizes violence and reacts appropriately.
MS2	**Skills:** Student keeps medical records.
MS3	**Skills:** During the examination of the child, the student recognizes the behavior and symptoms that indicate the possibility of occurrence of child abuse.
MS4	**Skills:** Student tries to avoid committing a medical error in his own actions.
MS5	**Skills:** Student shows responsibility for improving his qualifications and transferring knowledge to others.
MS6	**Skills:** Student recognizes his own limitations, makes a self-assessment of deficits and educational needs, plans his own educational activity.
INTRODUCTORY REQUIREMENTS	
Good knowledge of human anatomy and physiology. Knowledge of diagnostic methods with particular emphasis on imaging tests. Basic knowledge of clinical disciplines. Good orientation in the field of medical law and deontology.	
COURSE PROGRAM	**DETAILED DESCRIPTION OF THE TOPIC BLOCKS**

FORENSIC MEDICINE AND INTRODUCTION TO FORENSIC SCIENCE	
LECTURE 1	Place and importance of forensic medicine among medical sciences. Basic differences between forensic medicine and clinical disciplines as to the methods of conclusion making. Forensic medicine as a "bridging" discipline between medicine and law. History of forensic medicine. Forensic autopsy. Basic procedures and relevant modifications of the dissection technique. Types and procedures of collecting biological material for further examination. Autopsy protocol.
LECTURE 2	Thanatology. Death. Types of death. Postmortem changes. Examination of the corpse at the site of its disclosure. Determining the time of death. Case reports.
LECTURE 3	The participation of a medical examiner in the examination of the site where the corpse was discovered. Examination of the corpse at the site of its disclosure.
LECTURE 4	Post-mortem imaging. Laser scanning and photogrammetry. Acquisition data evaluation from PMCT and PMCTA. Ways of development of forensic medicine.
LECTURE 5	Virtual postmortem examination - analysis of the post-mortem CT acquisition data. Identification of the deceased person issues. Posttraumatic changes (injuries) and lesions due to illnesses. Homicide issues, including stab wounds and gunshot injuries.
LECTURE 6	Sudden deaths due to natural causes (diseases). Case reports. Forensic-medical histopathology issues. Microscopic examination of highly degradable material.
LECTURE 7	The concept of trauma and injury. Types of injuries. Blunt force injuries. Forensic neurotraumatology.
LECTURE 8	Medico-legal aspects of opinion giving regarding traffic accidents. Criminalistics issues. Forensic medical reconstruction of the course of road accidents. Air accidents.
LECTURE 9	Injuries caused by sharp objects. Opinion giving in homicide cases. Defensive injuries. Passive trauma: "stuck" on the knife. Case reports. Firearm injuries. Case reports.
LECTURE 10	Death due to asphyxia. Cases of pressure to the neck: hanging, ligature / manual strangulation. Case reports. Drowning. Electrocution. Case reports.
LECTURE 11	Neonaticide / infanticide. Child abuse.
LECTURE 12	Examination of adults for the purposes of legal proceedings. Symptoms of torture and maltreatment. The role of a court expert. Expert assertiveness issues.
LECTURE 13	Forensic medical assessment of the biological effect (health damage) due to injuries.

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LECTURE 14	Examination to determine the degree of health damage for the purposes of civil proceedings. Case reports.
LECTURE 15	Determining the fitness to participate in legal proceedings and to serve a sentence of imprisonment. Case reports. Team work with a psychiatrist. Incapacitation. Treatment without the consent of the patient.
LECTURE 16	Forensic genetics. Principles of collecting material for laboratory examination. Examination of material evidence. Contamination problems. (Tomasz Kupiec, PhD)
LECTURE 17	Diagnostic problems of disputed paternity with the use of DNA polymorphism. History of phenotype studies: blood groups, HLA. (Tomasz Kupiec, PhD)
LECTURE 18	Fundamentals of forensic toxicology. (Sebastian Rojek, PhD)
LECTURE 19	Selected forensic toxicology issues. Narcotic drugs and psychotropic substances, substitutes. Means similar to alcohol in the body of road users. Means used for criminal purposes. New psychoactive substances. (Sebastian Rojek, PhD)
LECTURE 20	Ethyl alcohol and non-consumable alcohols in forensic toxicology. Carbon monoxide poisoning. (Sebastian Rojek, PhD)
LECTURE 21	Forensic anthropology 1. Differentiation of human and animal bones. Biological profile of an unknown person based on the skeleton: sex, age at death, body height. Issues related to intra-population variability, secular trend issues and differentiation of epigenetic traits. Modern methods used in physical anthropology: computed tomography, laser scanning and 3D printing. (MSc Marta Barszcz - certified forensic anthropologist)
LECTURE 22	Forensic anthropology 2. Identification methods. Face reconstruction based on the skull. Frontal sinus analysis. Dental analysis. Skeleton assessment with regard of previous clinical radiology materials. Ethical problems related to the methods of age assessment in living people. (MSc Marta Barszcz - certified forensic anthropologist)
LECTURE 23	Medical error. Diagnostic and therapeutic misfortune. The role of a forensic medicine specialist in teams evaluating cases of an alleged medical error. Proper behavior of the physician to protect against medical error.
LECTURE 24	Forensic post-mortem examination – a film presentation of the autopsy procedures with comments.
CLASS 1	Forensic autopsy examination – case presentation and participation in post-mortem examination.

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DIDACTIC METHODS (APPLIED)	
	Multimedia presentations; Case study; Lectures; Laboratory classes.
STUDENTS WORKLOAD	
CONTACT HOURS WITH THE ACADEMIC TEACHER	50 hours
HOURS WITHOUT THE PARTICIPATION OF THE ACADEMIC TEACHER	Preparation for classes: 30 hours
TOTAL NUMBER OF HOURS FOR THE COURSE	80 hours
CONDITIONS FOR COURSE COMPLETION	
	[1] Participation in classes; [2] Mastering the material, taking into account the assumed learning outcomes; [3] Observation of the student in the long term to verify practical skills.
METHODS OF ASSESMENT	
IN TERMS OF KNOWLEDGE	Open-ended questions.
IN TERMS OF SKILLS	Open-ended questions taking into account the ability to synthesize information and draw one's own conclusions.
IN TERMS OF SOCIAL COMPETENCE	Not applicable.
FORMATIVE	Discussion - questions asked to Students during the classes. Participation in classes.
SUMMATIVE (I & II terms)	**I term (EXAM):** Written answer to 15 open-ended questions. **II term (RETAKE EXAM):** Oral exam.
GRADING SCALE	
3,0 (Satisfactory)	Assimilation of the material sufficiently to synthesize it and formulate correct conclusions; 60 - 66% of possible points.
3,5 (Satisfactory plus)	Assimilation of the material to the extent that allows its proper synthesis and formulation of correct conclusions; 67 - 74% of possible points.

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4,0 (Good)	Good assimilation of the material to a degree that allows for its proper synthesis and smooth formulation of correct conclusions; 75 - 82% of possible points.
4,5 (Good plus)	Agile assimilation of the material with a fluent orientation in its scope, the ability to properly synthesize it and easy formulation of correct conclusions; 83 - 90% of possible points.
5,0 (Very Good)	Agile assimilation of the material with its broad background, fluent orientation in its scope, the ability to properly synthesize it and easy formulation of correct conclusions; over 90% of possible points.

BASIC LITERATURE

[1] J.Payne-James, R.M.Jones (ed.) — Simpson's Forensic Medicine, 14th Edition, Boca Raton, 2020, CRC Press;
[2] D.Dolinak, E.Matshes, E.O.Lew — Forensic Pathology: Principles and Practice 1st Edition, 2006, Elsevier Academic Press.

SUPPLEMENTARY LITERATURE

[3] P.Saukko, B.Knight (ed.) — Knight's Forensic Pathology 4th Edition, Boca Raton, 2016, CRC Press;
[4] B.Madea (ed.) — Handbook of Forensic Medicine 1st Edition, Chichester, 2014, Wiley Blackwell;
[5] M.J.Thali, M.D.Viner, B.G.Brogdon (ed.) — Brogdon’s Forensic Radiology, Second Edition, London / New York, 2011, CRC Press;
[6] M.J.Thali, R.Dirnhofer, P.Vock (ed.) — The Virtopsy Approach. 3D Optical and Radiological Scanning Reconstruction in Forensic Medicine, London / New York, 2009, CRC Press;
[7] S.Grabherr, J.M.Grimm, A.Heinemann (ed.) — Atlas of Postmortem Angiography, Cham, 2016, Springer International Publishing.