

FORENSIC MEDICINE AND DEONTOLOGY

Accepted by Order of the Dean's Council- 02.07.2020

Accepted by the Faculty of Medicine Council with Protocol Number 5/08.07.2020

Year of study: 5

Semester: 10th semester

Exam: after the 10th semester

Total number of lectures: 75 hours

Lecturer: A habilitated lecturer from the Department of General and Clinical Pathology and Forensic Medicine.

CURRICULUM

Discipline	Final Exam	Hours				Hours by Years and by Semester	
		All	Lectures	Practicals	Credits		
Forensic Medicine and Deontology	X-th semester	75 h.	45 h.	30 h.	4,2	X	3/2

SUBJECT NAME: Forensic Medicine and Deontology

TYPE OF THE SUBJECT: Mandatory

LEVEL OF EDUCATION: Master Degree

TYPES OF EDUCATION: Attendance on lectures, practical seminars and self preparation

COURSE OF EDUCATION: 5th course- 2nd semester

DURATION: 1 semester

NUMBER OF LECTURE AND PRACTICAL HOURS THROUGH THE COURSE: 45 hours (lectures), 30 hours (practical seminars)

ANNOTATION: Basics of legal proceedings in Forensic Medicine. Forensic traumatology. Basics of Forensic Medical Expert Examination of living persons. Forensic Obstetrics and Gynaecology. Expert Examination of simulated diseases and self-injuries. Expert Examination in case of disputable paternity and/or maternity. Forensic Toxicology. Expert Examination of written data. Expert Examination of trace evidence. Medical Ethics and Deontology.

THE AIM of the course in Forensic Medicine is to develop capability and skills necessary in graduating medical students, for medicolegal cases in their career practice.

LEARNING OBJECTIVES: The main objective is to gain knowledge and practical skills necessary for participation in the functioning of courts.

TEACHING METHODS: In its methodological aspect Forensic Medicine uses routine clinical methods of research and training known from other fields of Medicine. Some of the methods are adjusted to the nature and specific characteristics of Forensic Medicine and others are innovative methods described in forensic literature. Experimentation, as a method, is used in the course of study or in the practice. The basic teaching methods are the following:

- ✓ demonstration of a medicolegal specimen or case
- ✓ solving practical problems
- ✓ introduction of the specific problems of the subject of the lecture by means of particular medicolegal cases
- ✓ work in groups
- ✓ laboratory practice
- ✓ doing tests and completing sample tasks

EQUIPMENT USED IN THE COURSE OF STUDY: projectors, diagrams, sketches, models, photographs, instructional film, organ specimens, posters related to different medicolegal cases, spectrophotometers, laboratory equipment, histologic specimens, multimedia presentations, instructional computers.

CONTROL AND ASSESSMENT

- ✓ *Current control* – tests at the end of each seminar. The grade resulting from the current control constitutes one third of the final grade.
- ✓ *Final control* – an end-of-semester exam; the grade thereof constitutes one third of the final grade. This exam includes a test, a written exam on a question randomly selected for each student and a discussion.

METHODS AND CONTROL: oral exams, written exams, solving a practical problem, - tests.

MINIMUM COMPETENCE:

- ✓ *Theoretical competence:* basic knowledge of basics of legal proceedings in forensic examination in The Republic of Bulgaria, thorough knowledge of Forensic Traumatology, Tanatology, Toxicology, Deontology.
- ✓ *Practical skills:* active participation in crime scene investigation of a dead body; writing a forensic report individually; distinguishing features of death, defining its duration, primary assessing its type and kind, properly

reacting to the bodies of Ministry of Interior and approaching them whenever necessary.

Forms of assessment:

Test + written exam + oral exam.

Ongoing assessment, tests, analyzing a forensic case.

Formation of the final grade:

The final grade determines the extent to which the given student has achieved the goal of education set at the beginning. It is multicomponent and includes the following components:

1. assessment (s) of current control and individual assignments;
2. assessment from the written work of the semester exam;
3. grade from a starting test for the semester exam
4. clarifying assessment from an oral exam;

bonus for results from competitions and contests, etc.

For each component participating in the final assessment, a coefficient of significance is determined (from 0 to 1), and the total sum of the coefficients is 1. The final assessment is obtained as a sum of the scores on a six-point system of the various components multiplied by the respective coefficients , as follows:

Q - final grade

K1 - assessment from current control during the semester

K2 - grade from the written work of the semester exam

K3 - cumulative clarifying grade from the starting test, oral exam, bonus for good results.

The formula for forming the final grade is: $Q = K1 + K2 + K3$;

$K1 = 0.2$; $K2 = 0.5$; $K3 = 0.3$

If one of the components of the final grade is weak (mark 2), then the final grade is necessarily weak (mark 2).

Aspects in the formation of the assessment:

Participation in discussions, entry tests and practical tasks.

Semester exam:

Yes (entrance test; written and oral exam).

State Exam:

No.

Leading lecturer:

Habilitated lecturer from the Department of Forensic Medicine and Deontology -
Assoc. Prof. Dr. Svetlozar Spasov Spasov

Assoc. Prof. Dr. Pavel Timonov (for the English course)

Department:

"Forensic Medicine and Deontology"

SCHEDULE OF LECTURES

LECTURE No 1 - 2 hours: Historical aspects of Forensic Medicine. Subject, objectives, methods and content of Forensic Medicine. Basics of legal proceedings in and organization of Forensic Medical Expert Examination – Penal Procedure Code, Criminal Code, Code of Civil Practice. Rights and obligations of the expert. Types of Expert examinations. Subjects of Forensic Medical Expert Examinations. Subjects of Forensic Medical Expert Examination. Responsibility of the experts.

LECTURE No 2 - 2 hours: Injuries caused by mechanical factors – general description, classification of injuries. Forensic Medical Expert Examination in blunt force trauma. Soft- tissue traumatic injuries – abrasions, bruises, lacerated wounds. Bone fractures typical of Forensic Medicine. Blunt force trauma of internal organs. Medicolegal aspects of blunt force trauma. Objectives of the Forensic Medical Expert Examination in case of such injuries.

LECTURE No 3 – 2 hours: Traffic accidents. Definition, classification, types. Injuries of pedestrians - characteristics of traumatic injuries. Rolling injuries - characteristics of traumatic injuries. Injuries of occupants of the vehicles- characteristics of traumatic injuries. Problems in cases of motor vehicle traumas. Objectives of the Forensic Medical Expert Examination. Medicolegal importance.

LECTURE No 4 – 2 hours: Forensic Medical Expert Examination in cases of sharp force trauma and firearm injuries. Stab, incised, puncture and chop wounds. Morphological characteristics. Distant, close, near and contact range gunshots. Morphological characteristics of entry and exit firearm wounds. Additional

gunshot factors. Medicolegal importance. Objectives of the Forensic Medical Expert Examination.

LECTURE No 5 – 2 hours: Cause and mechanism of death in case of mechanic force injuries. Vital and postmortem injuries.

LECTURE No 6 - 2 hours: Mechanical asphyxias – major issues, classification of mechanical asphyxias. Pathophysiology of mechanical asphyxias. Hanging, ligature strangulation and manual strangulation – general and type characteristics, manner of death. Problems. Objectives of the Forensic Medical Expert Examination.

LECTURE No 7 - 2 hours: Other types of mechanical asphyxias – drowning, airway obstruction, postural asphyxia, asphyxia due to exhaustion or displacement of environmental oxygen. Problems. Objectives of the Forensic Medical Expert Examination.

LECTURE No 8 - 2 hours: Thermal deaths. Cold. Burns. Scalds. Electrical injuries. Lightning stroke. Specific medicolegal issues.

LECTURE No 9 - 2 hours: Forensic Toxicology – definition of “poison”, toxicokinetics and toxicodynamics of poisoning, conditions influencing poison reactions, major issues, medicolegal tests to detect drugs or poisons in living persons or dead bodies, toxicological analysis.

LECTURE No 10 - 2 hours: Forensic Toxicology – specific issues, poisoning caused by different types of poison. Rare, particular poisonings.

LECTURE No 11 - 2 hours: Forensic Medical Expert Examination of dead body – Violent death and Sudden natural death.

LECTURE No 12 - 2 hours: Forensic Thanatology. Cause and mechanism of death. Meaning of cellular, clinical (somatic), brain-stem, biological death and suspended animation. Determination of death. Early postmortem changes – changes in the skin, changes in the eye, livor mortis, algor mortis, rigor mortis. Late postmortem changes- putrefaction, adipocere, mummification. Time since death.

LECTURE No 13 - 2 hours: Forensic Medical Expert Examination of living people. Bodily injuries according to the Criminal Code of the Republic of Bulgaria. Legal and medical criteria for bodily injury. Short summary of the various medicobiological signs.

LECTURE No 14 - 2 hours: Forensic Medical Expert Examination in cases pertaining to sex. Sexual offences and paraphilias – legal criteria according to the Criminal Code of the Republic of Bulgaria. Forensic Medical Expert Examination in case of debauchery.

LECTURE No 15 - 2 hours: Forensic Medical Expert Examination in cases of pregnancy, abortion and delivery. Criminal abortion – legal regulation of willful

abortion in the Republic of Bulgaria. Criminal liability in cases of criminal abortion.

LECTURE No 16 - 2 hours: Infanticide – legal criterion. Forensic Medical Expert Examination of dead body of newborn infant in cases of infanticide. Major issues, particular aspects of cadaver examination.

LECTURE No 17 - 2 hours: Disputable paternity or maternity. Blood type test – genetic rules and methods of examination. ABO system – clinical and medicolegal importance.

LECTURE No18 - 2 hours: Forensic Medical Expert Examination of trace (material) evidence. Biological materials- blood, sperm, saliva and other materials. DNA typing.

LECTURE No 19 - 2 hours: Forensic Medical Expert Examination in cases of forensic anthropology identification. Identification data.

LECTURE No 20 - 2 hours: Legal and deontological issues in the medical practice - legitimacy of medical actions. Euthanasia.

LECTURE No 21 - 2 hours: Professional negligence (Malpraxis) by medical staff. Classification of Malpraxis. Willful crimes regarding medical activity.

LECTURE No 22 - 3 hours: Professional incompetence of medical staff. Medical errors. Fatal accidents (misadventure) in the medical practice. „Calculated risk” cases in the medical practice.

SCHEDULE OF SEMINARS

Exercise № 1 - 2 hours - Introduction to forensic medicine and procedural basics of forensic medicine.

Introduction to forensic medicine - a general concept of forensic medicine. Objects of forensic examination. Introducing students to the requirements of the Department, the way of conducting the exercises, the current and final control.

Introducing students to the material base and the requirements of the department related to the training in forensic medicine. Introducing students to the main objectives of forensic education. Introducing students to the main areas, subjects, tasks and methods of forensic medicine, discussion on the topic.

Exercise № 2. - 2 school hours - Forensic examination of written data. preparation of forensic report based on written data.

Introducing students to the procedural basics and organization of forensic expertise in the Republic of Bulgaria. Introducing students to basic forensic concepts - the subject of forensic expertise and types of expertise. Introducing students to the rights, obligations, responsibilities and right of withdrawal of the

expert. Introducing students to the problems that may arise in the work of a medical practitioner.

Exercise № 3. - 2 school hours - Forensic examination of traumatic injuries from blunt objects.

Forensic examination of traumatic injuries with blunt objects. Damage from mechanical factors - general characteristics, classification of injuries. Forensic examination of injuries from blunt objects. Soft tissue traumatic injuries - abrasions, bruises, lacerations. Bone-specific fractures. Damage to the internal organs by blunt objects. Demonstrations of preparations, photos, slides, a corpse and a living person.

Introducing students to the characteristics and classification of mechanical injuries. Introducing students to the characteristics and classification of injuries from blunt objects. Introducing students to the tasks of expertise in these disabilities. Introducing students to the forensic significance of these disabilities. Observations of macroscopic preparations, photographs, slides, of a corpse and a living person. Solving a forensic case and a test by students.

Exercise № 4. - 2 school hours - Forensic examination of traumatic injuries from sharp objects.

Forensic examination of injuries with sharp objects. Puncture, stab, chop and incised wounds. Morphological characteristics. Demonstrations of preparations, photos, slides, a corpse and a living person.

Introducing students to the characteristics and classification of injuries from sharp objects. Introducing students to their morphological structure. Introducing students to the tasks of expertise in these disabilities. Introducing students to the forensic significance of these disabilities. Observations of macroscopic preparations, photographs, slides, of a corpse and a living person. Solving a forensic case and a test by students.

Exercise № 5. - 2 school hours forensic examination in case of injuries from vehicles.

Forensic examination of traumatic injuries from vehicles. Demonstrations of preparations, photos, slides, a corpse and a living person.

Introducing students to the characteristics and classification of injuries in transport injuries. Introducing students to the characteristics and classification of injuries in car injuries. Introducing students to the tasks of car injury expertise. Introducing students to the forensic significance of injuries in car injuries. Observation of microscopic preparations - fat embolism. Observations

of macroscopic preparations, photographs, slides, of a corpse and a living person. Solving a forensic case and a test by students.

Exercise № 6. - 2 school hours - Forensic examination of mechanical asphyxia. Forensic examination of mechanical asphyxia. Strangulations - hanging, ligature strangulation, manual strangulation - general and specific signs, type of death. Problems. Tasks before the expertise. Other types of mechanical asphyxia - drowning, airway obstruction, asphyxia due to compression of the chest and abdomen, traumatic asphyxia, asphyxia in enclosed space. Demonstration of a corpse.

Introducing students to the classification and pathophysiology of mechanical asphyxia. Introducing students to the tasks of expertise in mechanical asphyxia. Observations of macroscopic specimens, photographs, slides and demonstration of a corpse. Solving a forensic case and a test by students

Exercise № 7. - 2 school hours - Forensic examination in case of firearm injuries.

Forensic examination of traumatic injuries from firearms. Shot from distant range, close range and contact range. Morphological characteristics of the entry and exit gunshot wounds. Additional factors of the shot. Demonstrations of preparations, photos, slides, a corpse and a living person.

Introducing students to the characteristics and classification of injuries from firearms in relation to the distance of reproduction of the shot. Introducing students to the morphological characteristics of the entry and exit gunshot wounds. Introducing students to the types of additional factors of the shot. Introducing students to the tasks of expertise in these disabilities. Introducing students to the forensic significance of these disabilities. Observations of macroscopic preparations, photographs, slides, of a corpse and a living person. Solving a forensic case and a test by students.

Exercise № 8. - 2 school hours - Forensic examination of a corpse - examination, death, post-mortem changes, diagnosis of death. inspection of the corpse at the scene.

Forensic examination of a corpse - a demonstration exercise.

Introducing students to the basic requirements of the department related to the work in the autopsy (section) hall. Introducing students to the organization and stages of forensic examination of the corpse. Demonstration of basic samples to demonstrate pneumothorax, air embolism, or pulmonary embolism. Introducing students to the manner and rules of issuing a medical death certificate.

Exercise № 9. - 2 school hours - Forensic examination of a corpse - sudden death. forensic examination of a corpse of a newborn. infanticide.

Forensic examination of a corpse. Forensic examination of traumatic injuries, death, postmortem changes, diagnosis of death.

Introducing students to the procedural basics and tasks of forensic examination of a corpse in traumatic injuries. Introducing students to the clinical signs of death. Introducing students to the types of corpse changes and their use as indicators for determining the age of death. Discussion on the topic and consideration of a specific forensic examination of a corpse.

Exercise № 10. - 2 school hours Forensic examination of a corpse - demonstration exercise.

Participation of students in groups or individually in forensic examination of a corpse.

Exercise № 11. - 2 school hours - Preparation of forensic report of a corpse and its discussion.

Participation of students in groups or individually in the writing a forensic examination of a corpse. Discussion on the written forensic report.

Exercise № 12. - 2 school hours forensic examination of living persons - basic issues.

Introducing students to the reasons for certification and the relevant forensic documentation. Demonstration of a forensic medical examination at the request of a victim.

Exercise № 13. - 2 school hours - Forensic examination of living persons. Injuries by the Criminal Code.

Introducing students to the procedural basics and tasks of this type of expertise. Introducing students to the medical and biological characteristics of bodily injuries in our Criminal Code. Discussion on the topic and consideration of a specific forensic examination of a living person.

Exercise № 14. - 2 school hours - Forensic examination of living persons. Preparation of forensic certificate of living person.

Participation of students in groups or individually in writing a forensic certificate of living person.

Exercise № 15. - 2 lessons - Legal and deontological issues of medical practice. cases.

SYNOPSIS OF FORENSIC MEDICINE AND DEONTOLOGY EXAMINATION

1. Definition, subject, methods, content and importance of Forensic Medicine. Forensic Medical Expert Examination – definition, subjects, types. Basics of legal proceedings in Forensic Medicine in the Republic of Bulgaria (Penal Procedure Code and Code of Civil Practice). Organization of Forensic Medicine in the Republic of Bulgaria.
2. Injuries caused by mechanical factors. Comprehensive definition, classification of mechanical force injuries. The algorithm for description of the traumatic injuries. Major issues concerning Forensic Medical Expert Examination. Blunt force trauma – definition, types, mechanism of causation, morphological characteristics of the injuries.
3. Blunt force trauma. Abrasions – definition, mechanism of causation, morphological characteristics, medicolegal importance. Bruises – definition, mechanism of causation, morphological characteristics, medicolegal importance. Lacerations - definition, mechanism of causation, morphological characteristics, medicolegal importance.
4. Blunt force traumas of bones and internal organs.
5. Traffic accidents. Motor vehicle trauma – definition, classification, major issues concerning Forensic Medical Expert Examinations. Specific features of Forensic Medical Expert Examinations.
6. Traffic accidents. Injuries of pedestrians - characteristics of traumatic injuries.
7. Rolling injuries - characteristics of traumatic injuries.
8. Traffic accidents. Injuries of occupants of the vehicles-characteristics of traumatic injuries
9. Sharp force trauma. Sharp and thin objects. Blunt, long and rigid objects. Puncture wounds – morphological characteristics of injuries. Sharp-edged objects. Incised wounds morphological characteristics of injuries.
10. Sharp force trauma. Sharp and flat objects. Stab wounds – morphological characteristics of injuries. Chop wounds - morphological characteristics of injuries.
11. Firearm injuries. Definition. Mechanism of injury. Summary of Forensic Ballistics. Main objectives of forensic examination.
12. Ballistics of the entry and exit firearm wounds, ballistics of the wound track. Mechanism of production. Distances of the firearm shot.
13. Firearm injuries. Distant range. Morphological characteristics of injuries.

14. Close-range and near-range gunshots. Morphological characteristics of injuries.
15. Contact-range gunshot. Morphological characteristics of the injuries.
16. Firearm injuries by smooth bore firearm(shotgun) and country made firearm. Characteristics of injuries. Injuries caused by explosions.
17. Main legal aspects of firearm injuries in forensic practice.
18. Vital and postmortem injuries.
19. Cause and mechanism of death in case of mechanical force injuries.
20. Thermal injuries. Cold. Burns. Scalds. Local and general effects. Carbonization. Major issues concerning Forensic Medical Expert Examination.
21. Electrical injuries. Injuries caused by electrocution. Specific features of electrical injuries. Injuries caused by lightning stroke. Major issues concerning Forensic Medical Expert Examination in cases of electrical injuries and lightning stroke.
22. Mechanical asphyxia. General information. Vital symptoms of the mechanical asphyxia. Common morphological characteristics in cases of death caused by mechanical asphyxia-postmortem appearances. Classification of mechanical asphyxias.
23. Mechanical asphyxia. Hanging. Ligature strangulation and manual strangulation.
24. Mechanical asphyxia. Airway obstruction, postural asphyxia, asphyxia due to exhaustion or displacement of environmental oxygen. Autoerotic asphyxia. Major issues of Forensic Medical Expert Examination in cases of mechanical asphyxias.
25. Mechanical asphyxia. Drowning.
26. The impairment of health and death caused by the effect of chemical agents (Forensic Toxicology). General information, concept of poison and poisoning. Toxicodynamics and toxicokinetics. Factors and conditions influencing poison reactions.
27. Forensic estimation in a case of poisoning. Major issues of Forensic Medical Expert Examination in cases of poisoning. Types of the poisons.
28. Ethanol poisoning. Toxicodynamics and toxicokinetics of the ethyl alcohol. Clinical features of the inebriation. Diagnosis and methods for estimation of the alcohol level of living people. Autopsy features in a case of ethanol poisoning. Methyl poisoning.
29. Drug dependence (addiction and habituation). Major issues. Heroin poisoning. Cocaine poisoning. Cannabis poisoning. Major issues. Investigation of drug abuse deaths.

30. Forensic Medical Expert Examination of living people. Bodily injuries according to the Criminal Code of the Republic of Bulgaria. Legal and medical criteria for bodily injury. Short summary of the various medicobiological signs. Trivial bodily injury - article 130 from Criminal Code.
31. Forensic Medical Expert Examination of living people. Bodily injuries according to the Criminal Code of the Republic of Bulgaria. Medium bodily injury - legal and medical criteria (article 129 from Criminal Code)
32. Forensic Medical Expert Examination of living people. Bodily injuries according to the Criminal Code of the Republic of Bulgaria. Severe bodily injury - legal and medical criteria (article 128 from Criminal Code)
33. Forensic Medical Expert Examination of living people. Simulated diseases and self – injuries. Child abuse (article 187 from Criminal Code).
34. Forensic Medical Expert Examination of living people. Sexual offences and paraphilias. Fornication (act for the purpose of arousing or satisfying sexual desire, without copulation - articles 149 and 150 from Criminal Code).
35. Forensic Medical Expert Examination of living people. Sexual offences and paraphilias. Rape (sexual intercourse with a person of the female sex - article 152 from Criminal Code). Legal criteria and Forensic Medical Expert Examination in case of rape.
36. Homosexual acts (sexual intercourse or acts of sexual satisfaction with a person of the same sex - article 157 from Criminal Code). Legal criteria and Forensic Medical Expert Examination in case of debauchery.
37. Forensic Medical Expert Examination of dead body. Forensic Thanatology. Categorization of the death. Determination of death and suspended animation. Dying declaration.
38. Supravital reactions. Early postmortal changes. Medico-legal importance.
39. Late postmortal changes. Medico-legal importance.
40. Determining the time since death. Methods and medico-legal importance.
41. Steps in examination of the corpse. Crimescene investigation, forensic autopsy, methods of evisceration of internal organs and autopsy steps.
42. Forensic Medical Expert Examination of dead body. Forensic Medical Expert Examination of dead body of newborn infant. Infanticide. (articles 120 и 121 from Criminal Code). Major issues, particular aspects of cadaver examination.
43. Forensic Medical Expert Examination of dead body in cases of sudden natural death.
44. Medical Law and Ethics. Deontology. Definitions and major issues.

45. Medical and legal nature of Medical Standards and Regulations. Clinical pathways - nature and legal significance.
46. Legal capacity of medical persons - Bulgarian citizens and foreigners.
47. Limits of the legal capacity of the medical persons. Specialization. Work in the risk zone. Medical activities performed in conditions of extreme necessity.
48. Informed consent of patients under the Health Act. Modern legal requirements for medical personnel in connection with the provision of information to patients.
49. Patients' rights under the European and National Charter of Patients' Rights - in general, in hospitalization and in emergencies.
50. Emergencies. Patients' rights in case of medical emergency.
51. Scope and normative regulation of the obligatory and compulsory treatment.
52. Classification of professional violations, omissions and crimes in the exercise of the medical profession.
53. Criminal and disciplinary responsibility of the medical persons in case of professional omissions and mistakes.
54. Administrative and civil liability in case of professional omissions and mistakes. Tort. The concept of guilt. Procedure for imposing administrative penalties for professional omissions and mistakes. Ways to challenge an act, statement of findings and penal decree in case of imposed administrative penalties on medical persons.
55. Accidents in medical practice.

REFERENCES:

Compulsory:

1. Lecture course.
2. The essentials of Forensic medicine and Toxicology- Dr K. S. Narayan Reddy, 1999.
3. Handbook of Forensic medicine and Toxicology- V.V. Pillay, 2001.

Recommended:

1. Criminal Code of the Republic of Bulgaria (<http://legislationline.org>)
2. Vincent DiMaio. Forensic Pathology. Second Edition.

The program is approved by the Departmental Council

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