Ministry of Health of Ukraine
Poltava State Medical University
Department of Urology with Forensic Medicine

SYLLABUS
Forensic medicine. Medical law of Ukraine.

Module 1. Forensic medicine
(optional)

educational and professional level	second (masters) degree of high education
branch of knowledge	22 “Healthcare”
spatiality	222 «Medicine»
educational qualification	Master of medicine
professional education	doctor
educational and professional program	222 “«Medicine»”
form of training	daily
course (s) and semester (s) of study discipline	IV course, 7,8 semestr

Poltava – 2021

INFORMATION ABOUT TEACHERS TEACHING DISCIPLINE

Name and surname of teachers, scientific degree	V. Cherniak ., associate professor, docent O. Deviatkin.., associate professor, docent O. Prylutskyi., associate professor, docent D. Nikolenko., assistant R. Grynko., assistant
Teachers Profile (s)	https://www.umsa.edu.ua/fakultets/med-two/kafedry/urology/sud-med/workers
Contact phone	0562 60 96 14
E-mail:	valentyna.cherniak214@gmal.com
Webpage	https://www.umsa.edu.ua/fakultets/med-two/kafedry/urology/sud-med/workers

MAIN CHARACTERISTICS OF THE EDUCATIONAL DISCIPLINE

The volume of the discipline(module)

Number of credits / hours - 1,5 / 45, of which:
Lectures (hours) - 6
Practical lessons (hours) – 24
Selfpreparation work (h) - 15
Types of controls – FMC (final module control)

Discipline policy is determined by the system of requirements that research and teaching staff impose on students in the study of the discipline Module1. "Forensic Medicine" and is based on the principles of academic integrity (https://www.umsa.edu.ua/n-process/department-npr/normativni-dokumenti).

The Code of Academic Integrity applicants for higher education and employees of the Ukrainian medical stomatological academy

Compliance with academic integrity by students of education in the discipline requires:

• independent performance of educational tasks, tasks of current and final control of learning outcomes;

• links to sources of information in the case of the use of ideas, developments, statements, information;

• compliance with the law on copyright and related rights;

• providing reliable information about the results of their own educational or scientific activities, used research methods and sources of information.

Violation of academic integrity is: academic plagiarism, self-plagiarism, fabrication, falsification, writing off, deception.

For violation of academic integrity, students can be held liable under regulations. Applicants, studying the discipline M1. "Forensic medicine", are obliged to:

• follow the schedule of the educational process and prevent non-fulfillment of the curriculum and individual curriculum without good reason, come to class on time, in accordance with the schedule

• comply with the requirements for labor protection, safety, industrial sanitation, fire safety, provided by the relevant rules and instructions;

• comply with the requirements for the appearance (dress code) of persons, approved by the decision of the Rector's Office of 29.08.2014

• maintain order in the classrooms, carefully and neatly treat the property of the department (furniture, textbooks, macrodrugs, wet products, models);

• not to take things and various equipment out of classrooms and departments without the permission of scientific and pedagogical workers, and in case of intentional injury - to compensate their cost in the manner prescribed by applicable law;

• observance of moral and ethical principles of stay on the territory of clinical bases.

Applicants studying the discipline M1. "Forensic medicine", it is forbidden:

• leave the classroom during the lesson without the permission of the teacher;

• use mobile phones and other means of communication and information without the teacher's permission;

• engage in extraneous activities, distract other students and interfere with the teacher;

• use drugs, psychotropic substances and their analogues, alcoholic beverages at the department, smoke on the territory of the department and be in the department in a state of alcohol, drugs or other intoxication;

• commit illegal and immoral acts that may create dangerous conditions for the health and / or life of others, which degrade human dignity, use profanity;

Internal Regulations for students of Ukrainian medical stomatological academy)

Description of the discipline (abstract) Module1. Forensic medicine is a special medical science that studies and develops certain issues of medical, biological and forensic science for the needs of legal practice, justice, and health care.

Prerequisites and postrequisites of the discipline (interdisciplinary links)

Prerequisites Module 1. Forensic medicine is based on the knowledge gained by applicants for the second (master's) level of higher education in the study of human anatomy, histology, cytology and embryology, integrated with the study of pathomorphology, pathophysiology, experimental and clinical pharmacology with immunology and allergology.

Postrequisites. Necessary knowledge, skills and abilities acquired after studying **Module 1. Forensic medicine** is required for applicants for higher education when mastering such disciplines as internal medicine, surgery, traumatology and further professional activities.

The purpose and objectives of the discipline:

the purpose of studying the discipline **Module 1. Forensic medicine is:**

- providing graduates with a set of modern knowledge of medical, biological and forensic nature to address issues arising in the practice of justice and the judiciary during the investigation of cases against human health and life.

The main objectives of the discipline **Module 1. Forensic medicine are:**
- study of procedural and organizational issues of forensic examination;
- study of cadaveric phenomena as absolute signs of death and their forensic significance;
- study of the description of bodily injuries, their type, nature and mechanism of its occurrence, including to determine the severity of injuries;
- study of methods of research of material evidence of biological and forensic origin, including forensic identification of an unknown person.

Competences and learning outcomes in accordance with the educational and professional program, the formation of which is facilitated by the discipline (integral, general, special

Integral competence: the ability to solve complex problems and problems in the field of health care in the specialty "Medicine" in professional activities or in the learning process, which involves research and / or innovation and is characterized by uncertainty of conditions and requirements.

General competencies (GC):

GC	Competences
GC 2	Knowledge and understanding of the subject area and understanding of professional activity.
GC 3	Ability to apply knowledge in practice.
GC 4	Ability to communicate in the state language both orally and in writing.
GC 5	Ability to communicate in English. Ability use international Greco-Latin terms, abbreviations and clichés in professional oral and written speech
GC 9	Ability to identify, set and solve problems.

Special (professional, subject) competencies

SC	Competences
SC 1	Ability to collect medical information about the patient and analyze clinical data.
SC 5	Ability to design the process of providing medical care: identify approaches, plan, types and principles of treatment diseases of organs and tissues of the oral cavity and jaw-facial area.
SC 14	Ability to maintain regulatory medical records.
SC 15	Processing of state, social and medical information.

Program learning outcomes, *the formation of which contributes to the study module* 1. Forensic medicine.

Upon completion of the discipline Module 1. Forensic medicine higher education students must:

to know: the basics of knowledge about the modern possibilities of forensic examination, the structure of the service and the functions of its units, the performance of the functions of a forensic expert in accordance with procedural law in the professional field;

to be able to do: establish the fact of biological death, description of the corpse at the place of its discovery, description of corpse phenomena, description of bodily injuries and determination of their type, nature, detection and description of physical evidence of biological origin (including specimens, wet specimens, models, photo illustrations by topics).

Thematic plan of lectures. Module 1. Forensic medicine

№	Topic name	Hours
1	**1 Module 1. Forensic medicine** Procedural and organizational issues of forensic examination in Ukraine. Forensic thanatology. 1. Definition of the concept of forensic science and its components. 2. The structure of the forensic service in Ukraine 3. Objects of forensic medical research. 4. Stages of forensic medical examination and its regulation. Types of examinations and their forensic significance 5. Classification of death, relative and absolute signs of death. 6. Thanatology and its types, the concept of thanatogenesis, rapid and agonal death, diagnostic and morphological features. 7. Corpse phenomena: early and late. Early cadaveric phenomena: postmortem hypostasis, stages and methods of examination of hypostasis and their forensic significance 8. Forensic significance of cadaveric drying, rigor mortis, cooling and autolysis. 9. Late corpse phenomena: destructive and preserving.	2
2	General issues of forensic traumatology. Injuries with blunt and sharp objects. Forensic substantiation of the mechanism of injury and cause of death from blunt and sharp objects. 1. The concept of injury, its types, forensic significance. 2.Definition of the concept of blunt objects, blunt their classification. Classification of blunt objects by purpose (classification of MI Avdeev), and by the nature of the traumatic surface (AI Mukhanov, 1974, 1988). 3. Morphological features of blunt force trauma and the mechanism of injuries, their characteristics. 4. Abrasions, bruises, wounds from blunt objects, fractures,	2

	classification of fractures. 5. Features of injuries to human and animal body parts. 6. Features of injuries that occur when falling from a height. 7. Sharp force trauma, their classification, types of wounds from the action of sharp objects. 8. Forensic significance of wounds from the action of sharp objects, features of self-injury and extraneous injury. 9. Methods of study and identification of sharp objects and their injury.	
3	Forensic medical examination of victims, accused and other persons. Determining the severity of the injury, health and age. 1. Reasons and procedure for examination of victims, accused and other persons. 2. methods of examination. 3. Establishing the severity of injuries. 4. The concept of injury is life threatening. 5. Degrees of severity of bodily injuries, Qualification signs of heavy, average weight, light bodily injuries. 6. Forensic examination of health, simulation, aggravation, artificial diseases and self-harm.	2
	Total	6

Thematic plan of seminars by modules and content modules indicating the main issues addressed in the seminar - the curriculum is not provided

Topics of practical classes by modules and content modules Module 1. Forensic medicine

№№	Topic name	Hours
	Module 1. Forensic medicine	
	Content module 1. Subject and tasks of forensic medicine. Procedural and organizational issues of forensic examination in Ukraine. Forensic principles of examination of violent and non-violent death. Forensic thanatology.	
1.	Topic 1. Procedural and organizational issues of forensic examination in Ukraine. Forensic thanatology. 1. Definition of the concept of forensic science and its components. The concept of forensic medical examination as a component of science and service. 2. The structure of the forensic service in Ukraine 3. Objects of forensic medical examination. 3. Stages of forensic medical examination and its regulation 4. Types of examinations and their forensic significance 5. Classification of death, relative and absolute signs of death.	2

	6. Thanatology and its types, the concept of thanatogenesis, rapid and agonal death, diagnostic and morphological features. 7. Changes after death: early and late. Early changes: postmortem hypostasis, stages and methods of examination of hypostasis and their forensic significance 8. Estimation time of death by hypostasis 9. Forensic significance of cadaveric drying, rigor mortis, cooling and autolysis. 10. Late changes after death. Destructive: decomposition, stages and signs. 11. Late preserving corpse phenomena: mummification, fat wax, peat tanning, conditions of their occurrence and forensic significance.	
2.	Topic2. Forensic autopsy. Demonstration of autopsy. Determining the statute of limitations for death. Examination of the corpse at the scene. Drawing up of the "Protocol of inspection of a corpse on a place of its detection". Forensic examination of physical evidence of biological origin and forensic research methods. 1. Forensic medical examination of the corpse, general information, procedure, external and internal examination, determination of the statute of limitations for death. 2. Examination of the corpse at the scene. Detection, fixation, methods and stages of examination of the corpse, algorithms for the description of the corpse, clothing, physical evidence of biological origin, preparation of the "Protocol of examination of the corpse at the place of its detection". 3. Determination of age by teeth, Gerasimov's method (1955), identification of an unknown person by X-ray methods, the concept of modern radiovisiographic methods and interpretation of their data. 4. Features of forensic identification studies on bone remains and skull bones (photocombination, repair, modern computer methods), analysis and interpretation of odontograms, the structure of the "Recognition Card". 5. Features of research of objects of biological origin and methods of forensic criminology at examination of a corpse of the unknown person.	2
3.	Topic 3. Forensic examination in case of sudden death. Independent autopsy. 1. The concept of sudden death and its risk factors. 2. Features of the study of corpses and diagnosis of sudden death in diseases of the cardiovascular system, respiratory, digestive, central nervous and genitourinary systems;	2

	during pregnancy, during childbirth, from infectious diseases. 3. The use of laboratory tests - histological, histochemical, angiographic, flame-photometric, biochemical, bacteriological to substantiate the cause of death. 4. Sudden death in childhood: the main causes, diagnosis, sudden infant death syndrome. 5. Sudden death under special circumstances. 6. Determination of thanatogenesis in a combination of different nosological forms of diseases and injuries: establishing the root cause of death, its diagnosis.	
4.	Topic 4. Forensic examination of newborns. Active and passive infanticide. 1. Features of forensic examination / research / and technique of autopsy of newborn corpses. 2. Establishment of newborn, full-term, maturity, live birth, viability and longevity after life. 3. The use of the results of instrumental and laboratory research methods - histological, radiological, biochemical to substantiate the forensic conclusion. 4. Causes of death of the fetus and newborn: before, during ha after birth. 5. Infanticide: active and passive.	2
	Content module 2. Forensic medical examination of victims, accused and other persons. Determining the severity of injuries in trauma to the teeth. Forensic medical examination for controversial sexual conditions and sexual crimes.	
5.	Topic 5. Forensic examination to determine the severity of injuries, health and age. 1. Reasons for forensic medical examination of victims, accused and other persons, its organization, features and documentation. 2. Forensic medical examination regarding the presence of bodily injuries on the victim. Determining the types of injury, the duration of application and their severity. 3. Legal classification of bodily injuries according to the degree of their severity in accordance with the Criminal Code of Ukraine. Criteria for the severity of bodily injuries in accordance with the current "Rules of forensic determination of the severity of bodily injuries". 4. Severe injuries. 5. Moderate injuries. 6. Minor injuries. Beatings, muzzles, torture. 7. Examination of health status: simulation, aggravation, dissimulation, artificial diseases, self-harm / mutilation of	2

	members /.	
	Content module 3. General information about poisons, the mechanism of their action and the basics of forensic diagnosis of poisoning. Forensic examination of injuries and death from physical environmental factors. Forensic examination of injuries and death from extreme temperatures. Forensic examination of injury from technical and atmospheric electricity.	
6.	Topic 6. General information about poisons, the mechanism of their action and the basics of forensic diagnosis of poisoning. Forensic diagnosis of acute alcohol poisoning. Forensic examination of injuries and death from extreme temperatures. Forensic examination of injury from technical and atmospheric electricity. 1. Conditions of action of poisons. The course of poisoning. 2. Features of inspection of a scene at suspicion of death from poisoning. 3. Requirements for forensic medical examination of the corpse in case of suspicion of poisoning, forensic autopsy, forensic toxicological examination, rules for removal of organs and tissues of the corpse for laboratory tests. 4. Classification of poisons. 5. Ethanol poisoning: its effect on the body, toxicokinetics, quantitative determination of alcohol in blood and urine, research methods. Forensic diagnosis of death from alcohol intoxication. 6. Local and general action of high temperature. Burns caused by various factors, their morphological characteristics. 7. Features of examination of charred corpses, determination of the viability of the body in the flame. 8. The general effect of high temperature on the body. Heat and sunstroke. Features of diagnostics. 9. General and local action of low temperature. Death from hypothermia and its symptoms on the corpse. 10. Conditions that cause death from hypothermia, the genesis of death. 11. Forensic examination of death from the action of technical electric current. The mechanism of action of technical electric current on the human body. 12. Conditions that affect the consequences of electric shock. Genesis of death from electric shock. Features of the scene review. 13. Electrical mark of current entry and exit from the body; other signs of current action. Laboratory methods of electrolabel research.	2

	14. Injury by atmospheric electricity. Causes of death from electric shock.	
	Content module 4. General issues of forensic traumatology. Forensic examination of injuries from mechanical factors, forensic traumatology. Forensic examination of injuries blunt and sharp force trauma.	
7.	Topic 7. Forensic traumatology. Blunt force trauma. Forensic substantiation of the mechanism of injury and cause of death with blunt objects. The concept of catarrh. 1. Reasons for defining the concept of "injury", "injury". Injury to blunt objects, their classification. 2. General information about injury by blunt objects. The mechanism of action of blunt objects and the nature of injury arising from their action. 3. Abrasions, bruises, their morphological characteristics and forensic significance 4. Wounds from the action of blunt objects, their specific signs of fractures of the skeleton, skull. 5. Features of injuries by human and by animals. 6. Features of injuries that occur when falling from a height.	2
8.	Topic 8. Injury with sharp objects. 1. Types of sharp objects, mechanisms of injury. 2. Morphological features of cut, stabbed, chipped, chopped and sawn wounds, including features of injuries with sharp objects on the face and neck. 3. Features of injuries caused by own and third parties. Issues that arise during forensic examination of injuries with sharp objects. 4. Features of establishing the mechanism of action and identification of sharp objects. 5. Methods for determining the viability and prescription of injury.	2
9.	Topic 9. Forensic examination of gunshot wounds. 1. The concept of gunshot wounds, classification of firearms, its types. 2. Cartridge and its components. Shot mechanism: main ballistic wave, lethal force of the bullet. 3. Zones of action of spheres depending on their kinetic energy; hydrodynamic action of the ball. 4. Signs and options for a close shot. The value of the muzzle impression and the mechanism of its formation. 5. Close-range shot, its signs. 6. Close-range shot, its signs. 7.Determination of inlet and outlet bullet holes when shooting at different distances on clothing and skin. 8.	2

	Injury from hunting weapons. 9. Features of the gunshot wound channel in case of its passing through various bodies and fabrics. Establishing the direction of the shot when the bullet passes through the flat, tubular bones and parenchymal organs. 10. Injury from gas weapons, injury from grenades, incendiaries, mines, shells, explosives. 11. Special research methods used in the examination of gunshot wounds. 12. Features of inspection of a scene and value of investigative experiment for the decision of the questions put by investigative bodies at investigation of the cases connected with examination of gunshot wounds.	
10.	Topic 10. Forensic examination of mechanical asphyxia. Strangulation mechanical asphyxia. Forensic examination of aspiration, obturation, compression mechanical asphyxia. Forensic examination during drowning. 1. The concept of hypoxia, asphyxia and mechanical asphyxia. 2. Clinical picture of dying in asphyxia, stage of the course. Post-asphyxiation period. 3. General asphyxiation signs. Classification of mechanical asphyxia. 4. Strangulation mechanical asphyxia: hanging, blindness, their types and variants of imposition. 5. Genesis of death by hanging, diagnosis of death by hanging; species signs, signs of vitality and post-mortality, establishment of the mechanism of injuries on the body. 6. Loop suffocation, species characteristics, features of the strangulation furrow. Signs of struggle and self-defense. 7. Hand suffocation, morphological features and species. 8. Asphyxia from the ingress of foreign objects, fluid and vomit into the respiratory tract. Diagnosis of the viability of foreign objects in the respiratory tract. 9. Compression of the chest and abdomen, the genesis of death, morphological signs of this type of asphyxia. 10. Drowning: the mechanism of death, species signs, signs of the corpse in the water, laboratory research methods in the diagnosis of drowning. Injury to a corpse that was in the water. Establishing the period of stay of the corpse in the water. 11. Asphyxia in a limited (closed space).	2
11.	Content module 5. Drawing up of the Act of forensic medical examination of a corpse and formulation of the forensic medical diagnosis. * Topic 11. Drawing up of the Act of forensic medical	2

	examination of a corpse and formulation of the forensic medical diagnosis. 1.Determination of thanatogenesis in a combination of different nosological forms of disease and injury: establishing the root cause of death, its diagnosis. 2. The value of the analysis of the revealed diagnostic signs at the decision of expert questions and formulation of the forensic medical diagnosis. 3. The concept of the cause of death. Establishment and causes and genesis of death. 4. Documentation, which is compiled during forensic examination (examination) of corpses. 5. Principles of construction of forensic diagnosis and expert opinions.	
12.	Final module control (FMC)	2
	Total	24

Note: * The topic must be positively evaluated

Self-preparation work

№№/	Topic name	Hours
1.	**Preparation for practical classes -** theoretical training and development of practical skills.	7,5
2.	**Independent elaboration of topics that are not included in the classroom plan**	
1.	Forensic examination of injuries from biological factors. Poisoning by different groups of poisons. 1. The concept of the biological factor of the external environment and features of forensic examination. 2. Forensic diagnosis due to the action of local, blood, destructive, functional poisons and drugs. 3. Significance of forensic toxicological research in cases of death from poisoning.	0,5
2.	Forensic examination of catatrams. Forensic examination of a traffic injury. 1. The concept of catarrh (falling from a height). 2. Features of falling and the mechanism of injurys at falling from height and on the plane. 3. Injury to internal organs in catarrh. 4. The concept of transport injury, its types, mechanisms of transport injury. 5. Specific, characteristic, uncharacteristic injuries of a car injury. 6. features of forensic autopsy in case of traffic injury.	1,0
3.	Forensic medical examination of controversial sexual conditions and sexual crimes. 1. Examination of sexual conditions (hermaphroditism,	0,5

	sexual maturity). Establishing the sexual maturity of females and males. 2. Establishing the ability to sexual intercourse and fertilization (sexual and reproductive ability). 3. Establishing the nature and mechanism of injury during violent sexual intercourse (examination of rape). 4. Establishment of pregnancy and past births, Establishment of connection of abortion with trauma, establishment of artificial abortion (examination of criminal abortion). 5. Establishing signs of corruption. Establishing signs that may indicate the forcible gratification of sexual desire in an unnatural way (the commission of a violent act of homosexuality). 6. Detection of signs in males that can be used to establish the fact of violent sexual intercourse. Establishment of venereal disease.	
4.	Compilation of the Act of forensic medical examination (examination) of the corpse, "Expert opinion", formulation and justification of the forensic diagnosis. 1. Principles and stages "Act of forensic medical examination (examination)" and "Expert opinion". 2. Substantiation of forensic diagnosis, conclusions, conclusions and answers to questions during the study (examination) of the objects of forensic examination.	5,5
	Preparetion to final module control	3
	Total	**15**

8. Individual tasks: the work program does not provide.

The list of theoretical questions for preparation of applicants of higher education for final module control (FMC).

List of theoretical questions for preparing students for final module control:

1. What is forensic medicine?
2. Forensic medical examination and it types. Duties, tasks and responsibilities of the forensic medical examiner.
3. Medico-legal systems in the world.
4. Structure of the medical serves in Ukraine. Bureau of the forensic medical examination, subsections.
5. Definition of the “thanatology”. Cellular and somatic death.
6. Forensic medical examination of the dead body.
7. Death. Classification.
8. Pathophysiology of dying.

9. Forensic medical significance of the terminal stage of dying. Clinical and biological death.

10. Application of the organs and tissues for the corpses for transplantation. Legal, ethical and medical aspects of transplantation.

11. Diagnostic criteria for determination of the brain death.

12. Euthanasia.

13. Cause, mechanism and manner of death.

14. Plausible and absolute signs of death. Early changes after death.

15. Late changes after death. Natural conservation of the body.

16. How to “read” nommogram?

17. Forensic medical determination of the time of death. Supravital reaction.

18. Role of forensic examiner in establishing the time of death.

19. Sudden death. Definition and signs.

20. Risk factors of sudden death.

21. Diagnostics of the death from cardiovascular disease.

22. Diagnostics of the death from respiratory system disease.

23. Diagnostics of the death from disease of the digestive system, central nervous system, the genitourinary system.

24. Sudden death of the children. Sudden Infant Death Syndrome.

25. The estimation of maturity of a newborn baby or fetus.

26. Procedural position and organization of forensic autopsy.

27. General rules, procedures and phases of the forensic autopsy.

28. Forensic medical records, which is filled during and after the autopsy.

29. Death certification.

30. Examination of the death or crime scene.

31. Duties of a specialist in forensic medicine at the examination of the corpse at the death or crime scene.

32. The methods of determination of the time of death at the death or crime scene.

33. Forensic medical capabilities of the identification an unknown person.

34. Examination of the dead body of the newborn.

35. Medico-legal questions in case of the examination of the dead body of the newborn.

36. What is infanticide? What are the risky factors of SIDS?

37. Causes of death of the newborn.

38. Forensic medical examination of the living persons.

39. Abrasion and contusion. Their forensic medical significance.

40. Laceration. Characteristics, definition and signs.

41. Self-inflicted injuries.

42. Stab wounds. Self-inflicted injures.

43. Chop and incised wounds. Differences. Dependence from manner of death .

44. Questions what are resolved in case of stab, incised, chop wounds.
45. The main causes of death in cases of mechanical trauma.
46. Classification of the firearm weapon.
47. Components of the ammunition, mechanism of the shot.
48. Gunshot residue.
49. Kinetic energy of the projectile.
50. Specifics of the contact wounds.
51. Specifics of the intermediate distance wounds.
52. Specifics of the distant wounds.
53. Exit gunshot wounds.
54. Specifics of the shotgun wounds. Structure of the shotgun cartridge.
55. Medico-legal aspects pregnancy and abortion.
56. Examination of the scene in case of criminal abortion.
57. Causes of death in case of criminal abortion.
58. Asphyxia. Definition and classification.
59. Signs of asphyxia.
60. Hanging and ligature asphyxia.
61. Manual asphyxia. Gaging. Smothering.
62. Drowning.
63. Poison. Definition. Ways of the poison entering in the body.
64. The toxic and fatal dose.
65. Tolerance and idiosyncrasy.
66. Corrosive poison. Poisoning of the acids and alcalines.
67. Forensic medical diagnosis of poisons that form methemoglobin.
68. Poisoning with carbon monoxide.
69. Poisoning with ethyl alcohol and its surrogates.
70. Rules of the removal of internal organs for forensic toxicological studies and evaluation of their results.
71. Local effects of the heat on the body. Features of burns caused by various factors. Scalding.
72. General effect of high temperatures, overheating and sunstroke.
73. The local effect of cold. The degree frostbites and their morphological characteristics.
74. Forensic examination of the electrocution with technical electricity.
75. Forensic medical examination of blood.
76. Forensic medical examination of saliva, urine, sperm.
77. Forensic medical examination of hair.

Form of final control of learning success: final module control (FMC).

Current and final control system. Control measures for assessing the academic discipline of higher education students include current and final control of knowledge,

skills and abilities. The researcher must evaluate the success of the higher education student in each class on a four-point (traditional) scale. Evaluation criteria are defined by the working curriculum for the discipline M1. Forensic medicine, which is approved by the Academic Council of the Medical Faculty №2 UMSA. Control measures are based on the principles of: compliance with higher education standards; use of a standardized and unified diagnostic system aimed at the application of knowledge; definition of evaluation criteria; objectivity and transparency of control technology.

Assessment of success is integrated (all types of work of higher education students are evaluated both in preparation for the lesson and during the lesson) according to the criteria that are communicated to them at the beginning of the discipline. (table 1).

Conversion of the current grade, set on the traditional 4-point scale, to multi-point in each lesson is not carried out.

Criteria for assessing the knowledge of applicants for higher education: table 1

On a 4-point scale	Mark in ECTS	Evaluation criteria
5 (excellent)	A	The student shows special creative abilities, the content acquires knowledge independently, without the teacher's help finds and processes the necessary information, contains the use of values and content for decision-making in unusual situations, convincingly argues answers, independently reveals their talents and inclinations, does not mean% knowledge of topics during the survey and all other types of control.
4 (good)	B	The student is fluent in the studied amount of material, applies it in practice, freely solves exercises and problems in standardized situations, independently corrects errors, the number of which is insignificant, has at least 85% knowledge of the topic both during the survey and all types control.
	C	The student is able to compare, summarize, systematize information under the guidance of a scientific and pedagogical worker, in general, independently apply it in practice, control their own activities; to correct mistakes, among which there are significant, to choose arguments to confirm opinions, has at least 75% knowledge of the topic both during the survey and all types of control.
3 (satisfactorily)	D	The student reproduces a significant part of the theoretical material, shows knowledge and understanding of the basic provisions, with the help of a scientific and pedagogical worker can analyze the educational material, correct mistakes, among which there are a significant number of significant ones. Has at least 65% knowledge of the topic both during the survey and all types of control.
	E	The learner has educational material at a level higher than the

		initial, a significant part of it reproduces at the reproductive level. Has at least 60% knowledge of the topic both during the survey and all types of control.
2 unsatisfactorily	FX	The student has the material at the level of individual fragments that make up a small part of the material. Has less than 60% knowledge of the topic both during the survey and all types of control.
	F	The student has the material at the level of elementary recognition and reproduction of individual facts, elements, has less than 60% knowledge of the topic both during the survey and all types of control.

Before the FMC, the researcher calculates the arithmetic mean of the current performance of higher education students, which are converted according to table 2.

Scheme of accrual and distribution of points received by applicants for higher education for the current success of the scores on the FMC and the traditional four-point score .

table. 2

Average point for current performance (A)	Points for current success in the module (A*24)	Points for FMC from module (A*16)	Points for module end/or exam (A*24 + A*16)	Category ECTS	On a 4-point scale
1	2	3	4	5	6
2	48	32	80	F FX	2 unsatisfactorily
2,1	50	34	84		
2,15	52	34	86		
2,2	53	35	88		
2,25	54	36	90		
2,3	55	37	92		
2,35	56	38	94		
2,4	58	38	96		
2,45	59	39	98		
2,5	60	40	100		
2,55	61	41	102		
2,6	62	42	104		
2,65	64	42	106		
2,7	65	43	108		
2,75	66	44	110		
2,8	67	45	112		
2,85	68	46	114		
2,9	70	46	116		
2,95	71	47	118		
3	72	50	122	E	3 satisfactorily
3,05	73	50	123		
3,1	74	50	124		
3,15	76	50	126		
3,2	77	51	128		
3,25	78	52	130	D	
3,3	79	53	132		

3,35	80	54	134		
3,4	82	54	136		
3,45	83	55	138		
3,5	84	56	140	C	4 good
3,55	85	57	142		
3,6	86	58	144		
3,65	88	58	146		
3,7	89	59	148		
1	2	3	4	5	6
3,75	90	60	150	C	4 good
3,8	91	61	152		
3,85	92	62	154		
3,9	94	62	156		
3,95	95	63	158		
4	96	64	160	B	
4,05	97	65	162		
4,1	98	66	164		
4,15	100	66	166		
4,2	101	67	168		
4,25	102	68	170		
4,3	103	69	172		
4,35	104	70	174		
4,4	106	70	176		
4,45	107	71	178		
4,5	108	72	180	A	5 exellent
4,55	109	73	182		
4,6	110	74	184		
4,65	112	74	186		
4,7	113	75	188		
4,75	114	76	190		
4,8	115	77	192		
4,85	116	78	194		
4,9	118	78	196		
4,95	119	79	198		
5	120	80	200		

The minimum number of points that students receive for their current performance is 72.

The final control of mastering the module is carried out at the last practical lesson. Applicants who are admitted to the final module control are:

- attended all lectures (or worked out the missed lectures in the prescribed manner);
- attended practical classes (or completed missed classes in the prescribed manner) and scored the amount of points not less than the minimum;
- mastered practical skills:
-discovery, description, methods of research of corpse phenomena and age of death;
- have mastered the algorithms for describing injuries from various factors, their type, nature, mechanism of application, age, severity,

- learned to compile and interpret the results of forensic examination (examination) according to forensic documentation: "Protocol of examination of the corpse at the place of its detection", "Act of forensic examination (examination)" or "Expert opinion" (with wording and justification forensic diagnosis);

During the final module control, applicants for higher education are:

A) orally answer 2 questions;

B) perform a practically oriented task: the description of the macrodrug or wet preparation, in order to track the algorithms of description, diagnosis of the type, nature and mechanism of injury.

The assessment for the final module control consists of the assessment of all elements of the final module control.

Methods of conducting the final module control (FMC)

FMC is conducted in the form of an oral interview (by ticket). The ticket includes two control questions and a practice-oriented task of diagnosing one macrodrug or wet preparation with determination of the name of the organ or part of the organ, type, nature, location, form of injury, the presence of certain species and diagnostic signs of injury, the presence of foreign inclusions, overlays, layers. contamination, the amount of injury, the condition of the surrounding or adjacent tissues, the age of onset, the simultaneous application of injury, mechanogenesis or method of application, the action of a third party or your own hand.

Criteria for evaluating the oral examination:

28 - 30 points - for a theoretical question receives a graduate who has full theoretical educational material on the topic, can use the knowledge to answer questions, justify their answer; mastered practical skills.

24 - 27 points - for a theoretical question receives a graduate who has full theoretical material on the topic, can use the knowledge to answer the question, but with some difficulty justifies his answer; mastered practical skills.

20 - 23 points - for a theoretical question receives a higher education applicant who does not have enough theoretical educational material on the topic, with difficulty uses the acquired knowledge, can not justify their answer; insufficiently mastered practical skills.

0 points - receives a higher education applicant who does not have knowledge of the material, can not use the acquired knowledge to answer questions, justify your answer; did not learn all the practical skills.

Criteria for evaluating the diagnosis of organ specimen and wet organ specimen, respectively:

9 - 10 points - the applicant of higher education correctly identified the drug, the type of injury and fully substantiated the answer,

7 - 8 points - the applicant has correctly identified the drug, the type of injury, but with some difficulty justifies his answer,

5 - 6 points - the applicant correctly identified the drug, but could not justify the answer,

0 points - incorrectly defined drug and type of injury

In case of violation by the applicant of higher education of the rules of academic integrity (p.2.2.5. Of the Rules of Procedure), the results of the assessment obtained during the preparation of the PML for the answer, is assessed as "unsatisfactory".

Applicants for higher education, who during the study of the module from which the final control is conducted, had an average score of current performance from 4.50 to 5.0 are exempted from the FMC and automatically (by agreement) receive a final grade according to table 1., with the presence an applicant for education at the FMC is mandatory. In case of disagreement with the assessment, this category of higher education seekers is FMC according to the general rules.

The applicant for higher education has the right to compile and re-compile FMC. In exceptional cases, additional reorganization of the FMC may be carried out with the personal permission of the rector or the first vice-rector for scientific and pedagogical work.

The total sum of points for the module is defined as the sum of points of current success and points of FMC. The maximum number of points assigned to students when mastering each module (ECTS credit) is 200.

Upon completion of the study of Module 1. "Forensic Medicine" is filled in "Statement of final module control", which is submitted to the dean's office for further ranking of higher education and in the individual curriculum of higher education.

Active teaching methods

- verbal / verbal teaching methods (lecture, explanation, story),
- visual (illustration, demonstration),
- practical (practical work, under the guidance of a teacher,
- independent work with the book, methodical instruction),
- explanatory-illustrative or information-receptive (involves the presentation of ready-made information by the teacher and its assimilation by students).

Methods of control

oral control,
written control,
test control,
practical test,
self-control, self-esteem.

Methodical support

1. Work program on the discipline
2. Plans of lectures, practical classes and independent work of students
3. Syllabuses in the discipline
4. Multimedia accompaniment of lectures
5. Methodical instructions for independent work of students during preparation for a practical lesson and in class
6. Methodical materials that provide independent work of students
7. The list of questions to the final module control
8. Macropreparations, wet preparations, models, photo illustrations

9. Textbooks: "Forensic thanatological examination", "Forensic medicine

10. Samples "Act of forensic examination (" examination "),"Expert opinion", Identification card "

11. Test tasks, situational tasks

Recommended Literature:

Basic books:

1. Mykhailychenko B.V. Forensic Medicine : textbook / B.V. Mykhailychenko, A.M. Biliakov, I.G. Savka ; edited by B.V. Mykhailychenko. — 2nd edition. — Kyiv : AUS Medicine Publishing, 2019. — 224 p.

Supplementary literature:

1. Color Atlas of Forensic Medicine and Pathology -Edited by Charles A. Catanese, USA, 2009, p. 424.;

2. Eckert, William G. Introduction to forensic sciences. / William G. Eckert second editon. - New York: Elsevier, 1992. – P. 385

3. Richard Shepherd - Simpson's Forensic Medicine/Twelfth Edition Senior Lecturer in Forensic Medicine Forensic Medicine Unit St George's Medical and Dental School Tooting, London, UK, 2003, p. 198.

4. Longauer A., Bobrov N., Labaj P. Practicing in forensic medicine, Faculty of Medicine, P. J. Safarik University Kosice, Slovak Republic, 2000, p.98.

5. DiMaio V. Forensic Pathology, 2nd ed. / V. DiMaio, D. DiMaio // Practical aspects of criminal and forensic investigation, Boca Raton, London, New York, Washington, D.C.: CRC Press, 2001, p.562.

6. DiMaio V. J. M. Gunshot wounds. Practical aspects of firearms, ballistics, and forensic techniques. Second Edition / Vincent J. M. DiMaio. – CRS Press: New York, - 1999. – 400p.

16. Informational sources:

1. https://www.4tests.com/usmle#StartExam
2. http://www.medicalstudent.com/
3. http://www.thestudentroom.co.uk/wiki/Resources_for_Medical_Students
4. https://quizlet.com
5. http://library.med.utah.edu/WebPath/webpath.html
6. http://www.webpathology.com/
7. https://www.geisingermedicallabs.com/lab/resources.shtml
8. http:// www.umsa.edu.ua
9. http://ukrmed.org.ua
10. http://sudmed-p.ru
11. http:/forens-med.ru
12. Electronic library.

Developers:

V. Cherniak - as. professor
O. Deviatkin – as. professor
O. Prylutskyi - as. Professor