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**Federal State Autonomous Educational Institution of Higher Education
«Peoples' Friendship University of Russia named after Patrice Lumumba»
(RUDN University)
Institute of Medicine**

educational division (faculty/institute/academy) as higher education programme developer

COURSE SYLLABUS

MEDICAL CRIMINALISTICS

course title

Recommended by the Didactic Council for the Education Field of:

31.05.01 General Medicine

field of studies / speciality code and title

The course instruction is implemented within the professional education programme of higher education:

General Medicine

higher education programme profile/specialisation title

1. COURSE GOAL(s)

The discipline «Medical Criminalistics» is included in the program of the specialty «General medicine» for the field of studies 31.05.01 «General Medicine» and is studied in the 11th semester of the 6th year. The discipline is implemented by the Department of Forensic Medicine. The discipline consists of 3 sections and 7 topics and is aimed at studying issues of a biomedical nature that arise in law enforcement agencies during the investigation of criminal or civil cases.

The course is aimed at building up students' professional competencies based on knowledge of theoretical and practical issues of forensic medical examination, mastering additional knowledge in the field of forensic medicine and its modern capabilities for the successful fulfillment of the duties of a specialist on the instructions of investigative authorities in the implementation of the tasks of Russian healthcare contributing to further improvement of therapeutic and prophylactic healthcare quality.

2. REQUIREMENTS FOR LEARNING OUTCOMES

The course «Medical criminalistics» is expected to contribute to the following competences (parts of the competences):

Table 2.1. List of competences that students acquire through the course study

Competence code	Competence descriptor	Competence formation indicators (within this course)
GPC-11	Being able to prepare and apply scientific, research, development and production, design, organizational, management and regulatory documentation in the healthcare system.	GPC-11.2. Being able to apply scientific, research, development and production, design, organizational, management and regulatory documentation within the framework of their professional activities.
GPC-5	Being able to assess morpho-functional, physiological conditions and pathological processes in the human body to solve professional tasks.	GPC-5.3. Being able to determine morpho-functional, physiological states and pathological processes of the human body.

3. COURSE IN HIGHER EDUCATION PROGRAM STRUCTURE

The course «Medical criminalistics» is a part of Optional Module of the block FTD of the Education Programme.

Within the framework of the current Education Programme, students also master other disciplines and/or practices that contribute to achieving the planned results of mastering the discipline «Medical criminalistics».

The list of Higher Education Program components that contribute to expected learning outcomes:

Table 3.1. The list of the higher education programme components/disciplines that contribute to the achievement of the expected learning outcomes as the course study results

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
GPC-5	Being able to assess morpho-functional, physiological conditions and pathological processes in the human body to solve professional tasks	Biochemistry; Normal physiology; General Surgery; Obstetrics and gynecology; Biology; Microbiology, virology; Pathophysiology, clinical pathophysiology; Molecular genetic methods; Methods of microbiological diagnosis; Propaedeutics of internal diseases; Immunology; Pathological anatomy, clinical pathological anatomy; Radiation diagnostics; Medical Elementology; Ophthalmology; Methods of cell biology and histology; Chemistry; Pharmacology; Bioorganic chemistry; Anatomy; Histology, embryology, cytology; Topographic anatomy and operative surgery; Otorhinolaryngology; Pediatrics;	Phthisiology; Maxillofacial surgery; Dissection course;
GPC-11	Being able to prepare and apply scientific, research, development and production, design,	Public health and healthcare, health economics;	

Competence code	Competence descriptor	Previous courses/modules*	Subsequent courses/modules*
	organizational, management and regulatory documentation in the healthcare system	Fundamentals of research work; Evidence-based medicine; Hygiene; Latin language; Anatomy;	

* To be filled in according to the competence matrix of the higher education programme.

4. COURSE WORKLOAD AND ACADEMIC ACTIVITIES

The total workload of the course is 1 credit (36 academic hours).

Table 4.1. Types of academic activities during the periods of higher education programme mastering (**full-time training**)*

Types of academic activities	Total hours		Semesters
			11
<i>Contact work, hours</i>	17		17
<i>Lectures (L)</i>	0		0
<i>Lab work (LW)</i>	17		17
<i>Seminars (S)</i>	0		0
<i>Self-study, hours</i>	19		19
<i>Control (exam/test with assessment), hours</i>	0		0
Total hours	hours	36	36
	credit units	1	1

5. COURSE CONTENTS

Table 5.1. Course contents and academic activities types

Course module title	Course module contents (topics)	Academic activities types
Section 1. Determining the time of death. Application of biophysical methods for determining time of death.	1.1 Introduction to thanatology. The process of dying. Probable and reliable signs of death. The concept of supravital reactions and tissue survivability. Methods for determining time of death. Early cadaveric changes. Late cadaveric changes.	LW
	1.2 Application of modern biophysical methods for determining the time of death.	LW

	Principles of biophysical methods for determining time of death: the method of electronic paramagnetic resonance, chemiluminescent method.	
	1.3 Research work of the department: «Autofluorescence of NADH and FAD coenzymes as an indicator of the time since death». The use of fluorescence spectroscopy of NADH and FAD coenzymes in situ for determining time of death in various environmental conditions.	LW
Section 2. Forensic medical examination of poisoning with medicinal and narcotic substances.	2.1 Poisoning with medicinal and narcotic substances. Combined and concomitant poisoning. Poisoning with sibutramine, methadone, tetrahydrocannabinol derivatives, ethanol. Clinical and morphological signs of poisoning with sibutramine, methadone, tetrahydrocannabinol derivatives, ethanol.	LW
	2.2 Features of the accident scene inspection and laboratory diagnostics in cases of poisoning. The main methods of forensic chemical analysis: chromatography in a thin layer of sorbent, gas chromatography, liquid chromatography, high-performance liquid chromatography. Basic principles of screening of psychotropic and narcotic drugs in saliva, blood, urine and in hair of living persons. Basic principles of screening and quantitative determination of narcotic and psychotropic drugs in blood, urine, internal organs, nails and hair of a corpse.	LW
Section 3. Fundamentals of forensic osteology	3.1 Methodology of forensic osteological examination. The concept of group and individualizing personality traits	LW
	3.2 Forensic medical examination of skeletonized corpses and skeletal remains. Methods for diagnosing sex, age, race, body type, body length, signs of congenital and acquired diseases and injuries during the study of skeletonized remains. Methods of establishing sex, age, race, body type, body length, signs of congenital and acquired diseases and injuries during the study of skeletonized remains. Craniometry and osteometry techniques (using skull, teeth and bones of postcranial skeleton). Interpretation of results, methods of statistical data processing using the StatSoft Statistica software.	LW

* - to be filled in only for **full**-time training: *LC* - lectures; *LW* - lab work; *S* - seminars.

6. CLASSROOM EQUIPMENT AND TECHNOLOGY SUPPORT REQUIREMENTS

Table 6.1. Classroom equipment and technology support requirements

Classroom for Academic Activity Type	Classroom equipment	Specialized classroom/lab equipment, Software and studying materials (if necessary)
Lab-work	An auditorium for laboratory work, individual consultations, current control and interim certification, equipped with a set of specialized furniture and equipment.	A set of specialized furniture; a mannequin for simulating critical conditions; medical instruments; dummies, anatomical preparations; osteological preparations; histological micro-preparations; Micmed-1 var. 1 microscopes (in the amount of 20 pcs.); Lenovo laptop ThinkBook 15 G2 ITL 20VE00G6RU; projector 3D ViewSonic PJD5234; multimedia presentations; educational anonymized copies of expert opinions, materials of criminal and civil cases.
Computer classroom	A computer classroom for conducting classes, group and individual consultations, current control and interim certification, equipped with personal computers (1), a blackboard (screen) and multimedia presentation equipment.	ASUS VivoBook Laptop M533IA-BN289T (2 pcs.), interactive panel

Classroom for Academic Activity Type	Classroom equipment	Specialized classroom/lab equipment, Software and studying materials (if necessary)
Lab-work	Classroom for seminars, group and individual consultations, monitoring and mid-term assessment, equipped with a set of specialized furniture and multimedia presentation equipment.	A set of specialized furniture; a mannequin for simulating critical conditions; medical instruments; dummies, anatomical preparations; osteological preparations; histological micro-preparations; Micmed-2 microscope; Lenovo monoblock; Epson EHTW5600 projector; interactive panel; multimedia presentations; educational anonymized copies of expert opinions, materials of criminal and civil cases.
Self-studies	Classroom for self-studies (can be used for seminars and consultations), equipped with a set of specialized furniture and computers with stable wireless Internet connection.	A set of specialized furniture, a laptop Laptop ASUS VivoBook M533IABN289T, interactive panel, medical instruments, critical condition simulation dummy

* - the classroom for self-studies work of students is **MANDATORY!**

7. RECOMMENDED SOURCES FOR COURSE STUDY

a) Main readings:

1. Forensic medicine: textbook / D.V. Sundukov, E.H. Barinov, A.M. Golubev [et al.]. - Electronic text data - Moscow: RUDN University, 2025. - 724 p.: ill. - ISBN 978-5-209-12328-6: 135.06. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=530783&idb=0. 30 copies.

2. Forensic medical examination of stab wounds: a textbook / E.H. Barinov, A.R. Bashirova, M.V. Breskun, P.S. Velenko, R.E. Kalinin, A.V. Smirnov, D.V. Sundukov, E.V. Fokina.; edited by E. H. Barinov, M.V. Breskun, D.V. Sundukov. - Electronic text data. - Moscow: RUDN University, 2026. - 101 p. 50 copies.
3. Forensic thanatology. Determination of criteria for the duration of the postmortem period: forensic entomological and photolorimetric diagnostics : a textbook / E. H. Barinov, A. R. Bashirova, R. E. Kalinin [et al.] ; edited by E.H. Barinov, D.V. Sundukov. - Electronic text data. - Moscow: RUDN University, 2025. - 134 p.: ill. - ISBN 978-5-209-12592-1: 27.52. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=525336&idb=0. 10 copies.
4. Methods of radiation diagnostics during the examination of living persons: a textbook / E.H. Barinov, A.R. Bashirova, V.K. Dadabaev [et al.] ; edited by E.H. Barinova, D.V. Sundukova. - Electronic text data . - Moscow : RUDN University, 2023. - 165 p.: ill. - ISBN 978-5-209-11430-7: 160.64. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=510032&idb=0. 65 copies.
5. Forensic Medicine. Textbook : учебник / Yu.I. Pigolkin, I.A. Dubrovin ; Pigolkin Yu.I., Dubrovin I.A. - Москва : ГЭОТАР-Медиа, 2023. - 472 с. - ISBN 978-5-9704-7087-9. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=519358&idb=0
6. Forensic osteology : an educational and methodical manual: in 2 parts. Part 2 / D.V. Sundukov, E.H. Barinov, A.V. Smirnov. - Electronic text data. - Moscow : RUDN University, 2020. – 65 p.: ill. - ISBN 978-5-209-10384-4. - ISBN 978-5-209-09590-3. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=495755&idb=0. 53 copies.
7. Forensic osteology: an educational and methodical manual : in 2 parts. Part 1 / D.V. Sundukov, E.H. Barinov, A.V. Smirnov. - Electronic text data. - Moscow : RUDN University, 2019. - 64 p. : ill. - ISBN 978-5-209-09591-0. - ISBN 978-5-209-09590-3: 93.49. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=487077&idb=0. 87 copies.
8. Forensic medical examination of skeletonized remains: a textbook / D.V. Sundukov, E.H. Barinov, A.V. Smirnov. – Electronic text data. - M.: RUDN University, 2018. - 46 p.: ill. - ISBN 978-5-209-08805-9. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=468678&idb=0. 84 copies.
9. Forensic medical examination of poisoning: an educational and methodical manual / D.V. Sundukov, E.H. Barinov, O.L. Romanova. - Electronic text data. - M.: RUDN University, 2017. - 58 p. - ISBN 978-5-209-07965-1. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=460121&idb=0. 10 copies.

6) Additional readings:

1. Forensic medicine in diagrams and drawings: a textbook / P.O. Romodanovsky, E.H. Barinov. - Electronic text data. - M.: Prospekt, 2019. - 576 p.: ill. – ISBN. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=476811&idb=0. 5 copies.
2. Identification of a person by the features of the structure of teeth and dentition: a textbook / E.H. Barinov, A.I. Manin, P.O. Romodanovsky [et al.]. – Electronic text data. Moscow : RUDN University, 2019. 124 p. (in Russian) ISBN 978-5-209-09407-4. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=481405&idb=0. 3 copies.
3. Forensic medical examination in case of carbon monoxide poisoning: a textbook / D.V. Sundukov, E.H. Barinov, O.L. Romanova. – Electronic text data. - M.: RUDN University,

2018. - 46 p. - ISBN 978-5-209-08632-1. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=470319&idb=0.

4. Forensic medicine: a short course: a textbook / E.H. Barinov, P.O. Romodanovsky, D.V. Sundukov, O.L. Romanova. - Electronic text data. - M.: RUDN University, 2017. - 288 p.: ill. - ISBN 978-5-209-07480-9. https://mega.rudn.ru:443/MegaPro/UserEntry?Action=Rudn_FindDoc&id=464010&idb=0. 75 copies.

Resources of the Internet information and telecommunication network:

1. RUDN University ELS and third-party ELS, to which RUDN students have access on the basis of concluded contracts:

- Electronic library system of RUDN – ELS RUDN <http://mega.rudn.ru/MegaPro/Web>
- ELS «University Library online» <http://www.biblioclub.ru>
- ELS «Yurayt» <http://www.biblio-online.ru>
- ELS «Student Consultant» www.studentlibrary.ru
- ELS «Znanium» <https://znanium.ru/>

2. Databases and search engines:

- Sage <https://journals.sagepub.com/>
- Springer Nature Link <https://link.springer.com/>
- Wiley Journal Database <https://onlinelibrary.wiley.com/>
- Научометрическая база данных Lens.org <https://www.lens.org>

Educational and methodological materials for students' independent work in mastering the discipline/module:*

1. A course of lectures on the discipline «Medical criminalistics».

* - all educational and methodological materials for students' independent work are placed in accordance with the current procedure on the discipline page **in the TUIS!**

DEVELOPERS:

Teaching assistant,
Department of Forensic
Medicine

position, department

Bashirova A.R.

signature

Name

Head of the Department:

of History of Philosophy

Department

D.V. Sundukov

signature

Name

HEAD OF THE HIGHER EDUCATION PROGRAM:

Head of Department of General
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Position, department

N.V. Sturov

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Name