BURGAS STATE UNIVERSITY "PROF. DR. ASSEN ZLATAROV"

FACULTY OF MEDICINE

DEPARTMENT OF ANATOMY, HISTOLOGY AND EMBRYOLOGY, PATHOLOGY, FORENSIC MEDICINE AND DEONTOLOGY

APPROVED BY!

DEAN: .....

/ Prof. Dr. Rumyana Yankova, PhD/

SYLLABUS

Compulsory subject	**"CLINICAL ANATOMY"**
Specialty:	**MEDICINE**
Professional direction:	**7.1 MEDICINE**
Educational and qualification degree	**MASTER**
Form of education:	**REGULAR**
Professional qualification -	**M.D.**

Burgas, 2026

EXTRACTS FROM THE CURRICULUM

1. GENERAL PARAMETERS OF THE DISCIPLINE			
Total (academic hours):	60	**ECTS:**	2

Auditorium classes	**Non-auditorium classes**	**Auditorium ECTS**	**Non-auditorium ECTS**
30	**30**	**1**	**1**

Type of Discipline:	**Academic hours per week: /lectures + practices/**	*Course:*	*Semester:*
Mandatory	1 + 1	III	V

2. STUDY FORMS					
Auditorium classes:	**Academic hours**	**ECTS**	**Non-auditorium classes:**	**Academic hours**	**ECTS**
Lectures	15	0.5	**Consultation**	10	0.3
Practices	15	0.5	**Individual work**	20	0.7

3.EVALUATION AND CONTROL	
Forms of evaluation and control	**Relative share in the total score**
Sessional evaluation: exam	**0.4**
Semester (ongoing) assessment:	**0.6**
Forms of semester control:	
- Colloquium	**0.7**
- Evaluation of the protocol notebook	**0.3**

ANNOTATION

of the discipline "Clinical Anatomy"

Purpose of the Discipline

The discipline "Clinical Anatomy" is designed for students in their 3rd year, educational-qualification degree "Master", specialty "Medicine".

Objectives

In Clinical Anatomy, students acquire anatomical knowledge presented as a morphological basis for the onset of certain diseases and their complications. This serves as a valuable aid to students and a foundation for further upgrading knowledge of symptoms and the development of nosological units studied in clinical disciplines.

This is the first subject in the overall medical training that addresses disease manifestations by explaining the anatomical reasons for their occurrence. This has not only cognitive but also educational value in creating a lasting interest in medicine as a whole and its individual specialties.

Structure of the Educational Content

- Upgrading students' knowledge of the organs and their relationships in the human body, emphasizing clinical significance.
- Demonstrating the principle that structure reflects function and presenting the idea that functional impairments (pathologies) are often the result of, or cause, structural changes.
- Developing the ability to recognize anatomical structures in frequently used diagnostic imaging studies.
- Presentation of surface anatomical landmarks used in clinical medicine.

Teaching Aids:

Multimedia presentations, discussions, solving practically oriented clinical tasks.

Assessment of Acquired Knowledge:

When assessing students' knowledge, a combination of modern and classical methods is applied.

Current Control:

- Oral examination during the practical session.
- Seminar sessions: practical examination and test part.

Expected Outcomes

Upon completion of the training, students should possess the following knowledge and skills:

- Study of the basic clinical-anatomical processes and structural changes in individual nosological units.

- Acquisition of in-depth morphological knowledge in all sections of clinical anatomy, allowing for the lasting mastery of clinical disciplines and the development of high medical culture.

CONTENT OF THE CURRICULUM:

THEMATIC PLAN OF LECTURES – WINTER SEMESTER

No.	TOPIC	HOURS
1.	Subject of Clinical Anatomy. Clinical Anatomy of the Head and Face.	2 hours
2.	Clinical Anatomy of the Neck.	1 hour
3.	Clinical Anatomy of the Thorax, Chest, and Thoracic Structures.	2 hours
4.	Clinical Anatomy of the Abdomen.	2 hours
5.	Clinical Anatomy of the Pelvis.	2 hours
6.	Clinical Anatomy of the Upper Limbs.	2 hours
7.	Clinical Anatomy of the Lower Limbs.	2 hours
8.	Clinical Anatomy of the CNS.	2 hours
	TOTAL	**15 hours**

THEMATIC PLAN OF SEMINARS AND PRACTICAL EXERCISES

No.	TOPIC	HOURS
1.	Clinical Anatomy of the Head and Face.	2 hours
2.	Clinical Anatomy of the Neck.	1 hour
3.	Clinical Anatomy of the Thorax, Chest, and Thoracic Structures.	2 hours
4.	Clinical Anatomy of the Abdomen and Abdominal Cavity.	2 hours
5.	Clinical Anatomy of the Pelvis.	2 hours
6.	Clinical Anatomy of the Upper Limbs.	2 hours
7.	Clinical Anatomy of the Lower Limbs.	2 hours
8.	Clinical Anatomy of the CNS.	2 hours
	TOTAL	**15 hours**

QUESTIONARY FOR THE DISCIPLINE

"Clinical Anatomy"
specialty "Medicine"
Educational-Qualification Degree "MASTER",
professional qualification "PHYSICIAN"

1. Clinical Anatomy of the Head.
2. Clinical Anatomy of the Neck.
3. Clinical Anatomy of the Thoracic Cavity and Organs within the Thoracic Cavity.
4. Clinical Anatomy of the Abdomen and Organs within the Abdominal Cavity.
5. Clinical Anatomy of the Pelvis.
6. Clinical Anatomy of the Upper Limbs.
7. Clinical Anatomy of the Lower Limbs.
8. Clinical Anatomy of the CNS.

LITERATURE:

1. Clinical Anatomy. Collective. Edited by Prof. Chr. Chuchkov. Stara Zagora, 1998.
2. Gray's Anatomy Review, Second edition, ELSEVIER, 2016.
3. K. L. Moore, A. M. R. Agur, A. F. Dalley. Clinically Oriented Anatomy. Lippincott Williams & Wilkins; 7th edition, 2013.

Program compiled by:.....

/Prof. Dr. Minko Minkov/

Approved by a decision of the Council of the Department of Anatomy, Histology, Embryology, Pathology, Forensic Medicine and Ethics, Protocol № 36/06.01.2026г.

Head of Department:...
(Prof. Ivaylo Stefanov, MSD, PhD)

Approved by a decision of the Council of the Faculty of Medicine, Protocol № 38/09.01.2026г.

Secretary of the Council of the Faculty of Medicine: ...
(Chief Assistant Ruska Nenkova)

UNIVERSITY "PROF. Dr. ASEN ZLATAROV" - BURGAS

FACULTY OF MEDICINE

DEPARTMENT OF "INTERNAL DISEASES, SOCIAL MEDICINE, EMERGENCY MEDICINE, PHYSIOTHERAPY AND REHABILITATION"

Approved by!

DEAN:

/Prof. Rumyana Yankova, PhD/

SYLLABUS

Study discipline:	**DIGITAL HEALTH AND TELEMEDICINE**
Specialty:	**MEDICINE**
Professional direction:	**7.1. MEDICINE**
Educational and qualification degree:	**MASTER**
Form of education:	**REGULAR**

BURGAS 2025

SAMPLES FROM THE CURRICULUM

1. GENERAL PARAMETERS OF THE DISCIPLINE			
Total (academic hours):	60	**ECTS:**	2
Auditorium classes	**Non-auditorium classes**	**Auditorium ECTS**	**Non-auditorium ECTS**
30	30	1	1
Type of Discipline:	**Academic hours per week: /lectures + practices/**	*Course:*	*Semester:*
MANDATORY	1+1	**II**	***IV***

2. STUDY FORMS					
Auditorium classes:	**Academic hours**	**ECTS**	**Non-auditorium classes:**	**Hours**	**Credits:**
Lectures	15	0.5	Consultations (work with a teacher)	10	0.3
Seminar classes	15	0.5	Independent work	20	0.7
Practical classes	—	—			

3. EVALUATION AND CONTROL	
ASSESSMENT AND CONTROL FORMS	**Relative share in the total assessment**
Sessional evaluation: exam	**0.4**
Semester (ongoing) assessment:	**0.6**
Forms of semester control:	
- Attendance at classes	0.25
- Ongoing testing before each practical lesson	0.125
- Active participation in classes	0.125
- Control and tests	0.25
- Defense of protocols	0.25

ANNOTATION

of the course "Digital Health and Telemedicine"

Purpose of the course

The course "Digital Health and Telemedicine" is intended for students of the 2nd year, educational and qualification degree "Master", specialty "Medicine". Digital health, artificial intelligence, telemedicine, portable sensors, virtual reality – these new technologies will completely change the way patients and doctors perceive healthcare. These new technologies will significantly affect medical practice and the provision of healthcare in the near future. Additionally, the coronavirus pandemic has caused an explosive increase in the need for digital services, including those related to health and medicine. The course examines these new directions in medical science and their practical application

Objectives

To acquire knowledge in the field of digital health, telemedicine, artificial intelligence, virtual reality and their application in medicine and healthcare

Structure of the learning content

- lecture
- seminars
- discussions
- individual and group practical tasks
- analysis of ready-made statistical information, research of scientific literature

Teaching aids:

Multimedia presentations, discussions, solving practical - clinically oriented tasks.

Assessment of acquired knowledge.

When assessing the knowledge of students, a combination of modern and classical methods is applied.

Current control:

- Oral questioning during the practical session
- Seminars - practical testing and test part

Expected results

After completing the training, students should have the following knowledge and skills:

- Digital health, telemedicine, artificial intelligence, virtual reality and their application in medicine and healthcare

CURRICULUM CONTENT:

THEMATIC LECTURE PLAN

1.	Telemedicine – essence, history, challenges	2 hours
2.	Modern aspects of digital health – digital transformation of healthcare and medicine	2 hours
3.	Prospects and future application of digital technologies and telemedicine in medicine and healthcare	1 hour
4.	Digital health and artificial intelligence, virtual reality - prospects for their application in medicine and healthcare	2 hours
5.	Digital health and telemedicine as a means of dealing with socially significant diseases	2 hours
6.	Digital health and telemedicine as a means of dealing with the epidemic situation caused by COVID-19	2 hours
7.	The technological future of medical specialties	2 hours
8.	Digital health technologies that will change the activities of healthcare professionals	2 hours
	TOTAL	15hours

THEMATIC PLAN OF SEMINAR CLASSES AND PRACTICAL EXERCISES

1.	Introduction and relevance of the topic	1 hour
2.	Digital health and telemedicine - essence, history	2 hours
3.	Digital transformation in healthcare	2 hours
4.	Digital health and artificial intelligence, virtual reality - prospects for their application in medicine and healthcare	2 hours
5.	Modern digital trends that will change future cancer care	2 hours
6.	Digital health and telemedicine as a means of dealing with socially significant diseases	2 hours
7.	Digital health and telemedicine as a means of dealing with the epidemic situation caused by COVID-19	2 hours
8.	The technological future of medical specialties, removing barriers in healthcare with 3D printing	2 hours
	TOTAL	15 hours

DISCIPLINE SUMMARY

„Digital Health and Telemedicine"

specialty "Medicine"

Educational and qualification degree "MASTER",

1. Telemedicine - essence, history, challenges
2. Modern aspects of digital health - digital transformation of healthcare and medicine
3. Prospects and future application of digital technologies and telemedicine in medicine and healthcare
4. Digital health and artificial intelligence, virtual reality - prospects for their application in medicine and healthcare
5. Digital health and telemedicine as a means of dealing with socially significant diseases
6. Digital health and telemedicine as a means of dealing with the epidemic situation caused by COVID-19
7. The technological future of medical specialties
8. Digital health technologies that will change the activities of healthcare professionals in the future

LITERATURE:

Mandatory:

1. Lecture course in electronic form on Digital Health and Telemedicine – Assoc. Prof. Dr. Vl. Gonchev
2. Gonchev, V., Review of some modern applications of digital technologies in medicine and healthcare, University Publishing House "Prof. Dr. Asen Zlatarov", 2021 ISBN 978-619-7559-16-3
3. Gonchev, V., Digital health trends in 2021. Blach Sea Journal of Medicine and Public Health 2021, ISSN 2738-8654 Vol. 4, 2022, 94-101
4. Gonchev, V., Technological future of medical specialties, Blach Sea Journal of Medicine and Public Health, ISSN: 2738-8654 Vol. 2, 2021, 97-103
5. Gonchev, V., Some digital health trends that we will monitor in 2021 Management and Education, 16 (6) 2021 ISSN 13126121
6. Gonchev, V., Digital health technologies that will change the activities of nurses in the future Management and Education, 16 (6) 2021 ISSN 13126121

7. Gonchev, In Several contemporary trends that will change future cancer care Blach Sea Journal of Medicine and Public Health, vol.1 2021, № 1, 6-9 ISSN: 2738-8654
8. Gonchev, V., Digital health and artificial intelligence - prospects for their application in medicine, Collection of papers from the anniversary scientific conference with international participation "New approaches in public health and health policy" Pleven, November 26 - 28 2020 ISBN - 978-954-756-254-7, 194-196
9. Gonchev, V., Digital health, telemedicine and COVID-19, vol. Social Medicine, Issue 3, 2019. ISSN 1310-1757 (Print) ISSN 2603-3739, 23-27
10. Mesko, B., Dhunn, Pr., The Technological Future of Medical Specialties, The Medical Futurist 2021
11. Mesko, B., Dhunn, Pr., Digital Health and the fight against COVID-19 pandemic 2020, The medical futurist handbook, 2020
12. Topol, Eric. The creative destruction of medicine: how the digital revolution will create better health care. New York: Basic Books. 2012 ISBN 978-0465025503

Recommended:

1. Vinarova Zh., M. Vukov, Textbook of Telemedicine, ISBN 954-535-269-8, NBU Publishing House, Sofia, 2002
2. Vinarova, Zh., P. Mihova, CD "Workshop MIS Svogia" ISBN 954-535-424-0
3. Mihova, P., Telemedicine Functions of a Medical Information System Sofia, 2014
4. Gonchev, V., Digital Health Trends in 2021. Blach Sea Journal of Medicine and Public Health 2021, ISSN 2738-8654 Vol. 4, 2022, 94-101
5. Gonchev, V., Technological Future of Medical Specialties, Blach Sea Journal of Medicine and Public Health, ISSN: 2738-8654 Vol. 2, 2021, 97-103
6. Gonchev, V., Some digital health trends to watch in 2021 Management and Education, 16 (6) 2021 ISSN 13126121
7. Gonchev, V., Digital health technologies that will change the activities of nurses in the future Management and Education, 16 (6) 2021 ISSN 13126121
8. Gonchev, V., Several contemporary trends that will change future cancer care Blach Sea Journal of Medicine and Public Health, vol.1 2021, № 1, 6-9 ISSN: 2738-8654
9. Gonchev, V., Digital health and artificial intelligence - prospects for their application in medicine, Proceedings of the anniversary scientific conference with international participation "New approaches in public health and health policy" Pleven, November 26-28 2020 ISBN - 978-954-756-254-7, 194-196

10. Karadjova, Zl., Gonchev, V., Possibilities for the application of digital health and telemedicine in medical tourism in the context of the Covid 19 pandemic, journal "Health Policy and Management" issue 20, 2020, ISSN 1313 – 4981 pp. 229-232

Compiled by: .....

/Prof. Vladimir Gonchev MD, PhD/

The curriculum for the discipline "Digital Health and Telemedicine" for the specialty "Medicine" was adopted at a meeting of the Department of " Internal Diseases, Social Medicine, Emergency Medicine, Physiotherapy And Rehabilitation ", Minutes No. of 18.01.2025г.

Head of Department:

/Prof. Vladimir Gonchev MD, PhD/

The curriculum was adopted and discussed at the Faculty Council of the Faculty of Medicine, Minutes No. 18 of 13.01.2025г.

Scientific Secretary of the Faculty: ....

(Senior Asst. Prof. Dr. Kuska Nenkova)

BURGAS STATE UNIVERSITY "PROF. DR. ASSEN ZLATAROV" –
MEDICAL FACULTY
DEPARTMENT OF ANAESTHESIOLOGY, OBSTETRICS & GYNECOLOGY, SURGERY, ORTHOPEDICS, TRAUMATOLOGY, UROLOGY, NEUROSURGERY, EMERGENCY AND INTENSIVE CARE

Approved by:
DEAN:
/ Prof. Rumyana Yankova, PhD/

SYLLABUS

Discipline:	**DISASTER MEDICINE**
Specialty:	**MEDICINE**
Professional field:	**7.1 Medicine**
Educational qualification degree:	**MASTER**
Form of training:	**REGULAR**

Burgas, 2025

EXTRACTS FROM THE CURRICULUM

1. GENERAL PARAMETERS OF THE DISCIPLINE			
Total (academic hours):	60	**ECTS:**	2
Auditorium classes	**Non-auditorium classes**	**Auditorium ECTS**	**Non-auditorium ECTS**
45	15	1.5	0.5
Type of Discipline	**Number of hours per week: /lectures + practical session/**	**Course:**	**Semester:**
elective	1+2	third	fifth

2. STUDY FORMS					
Auditorium classes:	**Academic hours**	**ECTS**	**Non-auditorium classes:**	**Academic hours**	**ECTS**
Lectures	15	0.50	**Consultations**	15	0.17
			Individual work with a lecturer	30	1.00
Practical classes	30	1.00	Individual work work on an assignment outside of class	10	0.33

3. ASSESSMENT AND CONTROL	
Forms of assessment and control	**Relative share in the total score**
Sessional evaluation: exam	0.4
Semester (ongoing) assessment:	0.6
Forms of semester control:	
- Attendance at classes	0.2
- Active participation in classes	0.3
- Control works for current control (abstract)	0.5

ANNOTATION
of the discipline "DISASTER MANAGEMENT"

Purpose of the course

The course "Disaster Medicine" is mandatory and is intended for students of the specialty "Medicine", third year, full-time form of education, educational and qualification degree "Master". The course is divided in two modules*[1].

The objectives of the discipline "Disaster Medicine" are related to the opportunity for students to acquire knowledge and practical skills, within the area of the protection and restoration of people's lives, their health and their working capacity as a result of mass damage in disasters. This is knowledge primarily in the field of risk and dangers arising as a result of natural and man-made disasters.

The first module of the course examines issues related to the taxonomy of the basic hazards arising from the creation of disaster situations - natural (earthquakes, floods, etc.) and anthropogenic (ionizing radiation and accidents with the spread of toxic substances, fires and explosions). The main parameters and damaging factors in natural disasters are studied, as well as the behavior and actions of the population that has fallen into the threatened zones of damage during the realization of critical situations. The main physical characteristics, properties and toxic effects on the body of the most frequently used hazardous chemical substances in industry are presented. The issues of the biological effects of ionizing radiation and industrial toxic substances on humans, as well as methods of prevention and protection from them are also examined.

The second module studies the basic principles of medical insurance and the organization of medical care in disaster situations, methods and means of individual and collective protection, methods of providing first aid.

The tasks of the discipline include:

- basic knowledge of natural and man-made disasters;

- taxonomy of hazards arising as a result of critical situations from natural and man-made disasters;

- measures to protect the population in the event of critical situations threatening the health and life of the population;

- development of critical thinking and a creative approach to decision-making in critical situations.

Structure of the curriculum content: The study within the discipline includes lectures, practical exercises and tasks for individual work.

Teaching methods and means: Part of the lectures and exercises are presented using multimedia. The exercises are preferably conducted in a specialized classroom. The means for the implementation of the set goals and tasks are audio, computer and communication technologies.

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[1] The educational program was developed with the consultation of Colin Meghoo, MD, MSc, FACS, Fulbright specialist grantee at University "Prof.d-r Assen Zlatarov", Burgas, 2024

Forms of training: The study of the discipline is carried out in the following forms:

1. Lectures, in which are given the basic theoretical knowledge on the considered curriculum's topics. For some of the topics and subtopics that can be studied individually by students, the lectures are introductory. They reveal the essence of the issues falling within the scope of the topics and lead the individual work within the recommended literature. In parallel with the lecture material, discussions will be held on theoretical issues, solving tasks related to the practical application of the methods under consideration, solving didactic tests and case studies, etc.

2. Consultations to clarify basic concepts, statistical characteristics, etc. and guidance on their specific features, aimed to overcome the difficulties (if any) within the individual work, etc.

3. Students' individual work is organized through consultations during the lecturers' reception hours, through communication by e-mail, joint work on scientific and professional tasks, covering current tests on a given topic by the lecturer conducting the exercises, etc.

Assessment methods: exam in the discipline, active participation in classes and independent work (0.3), attendance at classes (0.2), preparation of an abstract on a scientific assignment (0.5).

Abstract

The abstract is assigned as a comprehensive assessment of what has been learned so far, including an assessment of the impact of different types of toxic substances and ionizing radiation that have arisen as a result of a disaster situation on the health and safety of people.

Prerequisites for the basic knowledge and skills of students

Students should have knowledge in the field of safety rules and disaster protection, be familiar with the semantic content of the concepts "risk", "danger", "disaster", "first aid" and the Disaster Protection Law of the Republic of Bulgaria. Have the skills to make logical connections between different data, summarize information flows, make deductive analysis and inductive conclusions, and have the attitude and desire to search for additional information, apply logical thinking and demonstrate readiness for action in critical situations.

Expected results:

After successfully completing the course in the discipline, students should know and be able to:

- identify the main hazards and know the taxonomy by types of impacts on humans, during implementation, by specificity of action, forced and voluntary hazards;

- respond adequately to a created disaster situation by providing timely and competent first aid;

- possess theoretical knowledge about the toxic effect on the human body of the most commonly used poisonous substances and the biological effect of ionizing radiation, including prevention and protection.

CURRICULUM CONTENT
LECTURES

First module

Subject	hours
Topic 1. Subject and objectives of the discipline. Terminology Classification of disasters. General characteristics of natural disasters. Characteristics of earthquakes. Striking and secondary factors. Characteristics of catastrophic floods and major industrial accidents. Characteristics of the main preventive measures.	2
Topic 2. Physical nature of ionizing radiation. Radiation background – types. Sources of radioactive contamination of the environment. Harmful factors in an accident at a nuclear power plant. Biological effect of ionizing radiation. Pathways for entry of radioactive substances into the body. Prevention and protection.	2
Topic 3. Industrial toxic substances. Basic concepts. Toxicity. Degree of toxic effect. Maximum permissible doses.	1
Topic 4. Toxic effect of poisonous substances with asphyxiating, irritating and generally toxic effects (chlorine, phosgene, carbon monoxide, hydrogen cyanide, ammonia, sulfur and nitrogen oxides). Toxic effect. First aid. Degassing and protection. Substances with nerve effects.	2

Second module

Topic 5. Basic principles and organization of medical insurance in disaster situations. First aid, first medical aid and specialized medical aid. Medical measures in the disaster area	2
Topic 6. Principles and features of the organization of emergency medical care for a large number of victims. Forces and means for medical provision of the population in disaster situations. Medical triage, medical evacuation.	2
Topic 7. Basic principles in the organization of hygienic and epidemiological service to the population in disaster situations. Biological outbreaks of infection and modern bioterrorism - general characteristics, classification and indication. Prerequisites and possibilities for the occurrence of an epidemiological outbreak and a biological infection outbreak, characteristics, principles and measures for protection against biological weapons	2
Topic 8. Biological infection outbreak's elimination measures. Objectives, aims and organization of implementation. Preventive, curative and anti-epidemic measures carried out by official bodies and health services. Forces and means. Organization of isolation and restrictive measures - quarantine and observation. Methods and means of protection against biological agents.	2
TOTAL:	**15**

PRACTICAL SESSIONS

First module

№	Topic	hours
1	Taxonomy of the main hazards	3
2	Ionizing radiation. Basic dosimetry quantities and units for their measurement	2
3	Decontamination. Safety measures for the consumption of ready-made foods and agricultural products	2
4	Analysis of the radiation situation resulting from an accident at a nuclear power plant	2
5	Analysis of the chemical situation resulting from an industrial accident. Instruments for control and monitoring of chemical pollution.	2
6	Fires - causes of fires. Limitation and elimination of fires. Fire extinguishing agents.	2
7	Evacuation, individual and collective means of protection from the damaging factors in natural and man-made disasters.	2
	Second module	
8	Basic principles of medical insurance	2
9	Organization of medical assistance in disaster situations. Activities in the disaster area. Medical triage. Organization and volume of first aid	3
10	Medical evacuation. First aid and specialized medical assistance	2
11	Provision of first aid and transportation of victims with various types of injuries. Methods of temporary hemostasis	4
12	CPR Artificial respiration and external cardiac massage	4
	TOTAL:	**30**

EXAMINATION QUESTIONNAIRE

1. Subject and objectives of the discipline. Terminology. Classification of disasters.
2.General characteristics of natural disasters. Earthquakes and floods. Main parameters. Damaging and secondary factors. Behavior and actions of the population in the threatened areas of damage.
3. Taxonomy of the main hazards.
4. Ionizing radiation. Main dosimetry quantities and units for their measurement.
5. Radiation background - types. Sources of radioactive contamination of the environment. damaging factors in the event of an accident at a nuclear power plant.
6. Biological effect of ionizing radiation.
7. Mechanism of radioactive contamination. Radiation damage. Protection.
8. Decontamination. Safety measures for the consumption of ready-made foods and agricultural products.
9. Analysis of a radiation situation that occurred in an accident at a nuclear power plant.
10. Industrial toxic substances. Basic concepts. Toxicity. Degree of toxic effect. Maximum permissible doses.
11. Chemical pollution with chlorine and phosgene. Physico-chemical properties, toxic effect. First aid and protection.
12. Chemical pollution with ammonia and sulfur oxides Physico-chemical properties, toxic effect. First aid and protection.
13. Chemical pollution with carbon monoxide, hydrogen cyanide, organophosphorus poisonous substances Physico-chemical properties, toxic effect. First aid and protection.
14. Analysis of the chemical situation resulting from a production accident. Devices for control and monitoring of chemical pollution.
15. Evacuation, individual and collective means of protection from damaging factors in natural and man-made disasters.
16. Basic principles in the organization of medical insurance in disaster situations.
17. First aid, pre- medical aid and specialized medical aid. Medical measures in the disaster area.
18. Principles and features in the organization of emergency medical care, in the case of a large number of victims. Medical triage. Medical evacuation.
19. Basic principles in the organization of hygienic and epidemiological service to the population in disaster situations. Biological outbreak of infection and modern bioterrorism.
20. Occurrence of an epidemiological outbreak and a focus of biological infection. Principles and measures for protection against biological weapons.
21. Measures for the elimination of a focus of biological infection. Prevention, treatment and anti-epidemic measures.
22. Organization of isolation and containment measures - quarantine and observation. Methods and means of protection against biological agents

RECOMMENDED LITERATURE

1. Rega P., Disaster preparedness and response, Publisher New York, Oxford University Press, 2022
2. Hristo Bozov, Sea medicine rules, Military Medicine academy, 2018
3. Hristo Bozov, Energency Medicine, Assen Zlatarov ' University Press, 2021
4. Disaster Protection - Basic Rules and Actions in Disaster Situations with Training Models, Sabina Nedkova, Plamena Atanasova, Press: University "Prof. Dr. Assen Zlatarov", Printed by Breeze, ISBN 978-619-7559-64-4, 2025
5. Dragolov, D., Protection of the population from accidents, natural disasters and environmental protection, University of St. Cyril and Methodius, Veliko Tarnovo, 2011.
6. Stefanov, S., M. Kolev, K. Kostadinov Protection of the population from accidents, natural disasters and environmental protection, University of St. Cyril and Methodius, Veliko Tarnovo, 2007.
7. Kamen Kanev and colleagues, Textbook of Medicine in Disaster Situations, University Publishing House "St. Kliment Ohridski", 2017.
8. Oreshkov, T., Hazardous substances, PB at the University "Prof. Dr. Asen Zlatarov", Burgas, 2009.
9. Law on Disaster Protection, published in the State Gazette, issue 102 of December 19, 2006, amended and supplemented by the State Gazette. Issue 60 of July 7, 2020.

ADDITIONAL LITERATURE

1. Berberova R., Natural Disasters in Bulgaria - Status and Trends, New Bulgarian University Publishing House, Sofia2, 2012
2. Law on Protection from the Harmful Effects of Chemical Substances and Mixtures, State Gazette, No. 10 of 04.02.2000.
3. Badinski L., k. GIGOV, K. Dragiev and col. Handbook of Medicine of Disaster Situations (Disasters) and "Krasik Design", Sofia 2007;
4. Romanova Hr. "Medicine of Disasters", Varna, 2007

Compiled by: .....

(Prof. Dr. Hristo Bozov, MD)

.....

Assist. Prof. Sabina Nedkova

Approved by a decision of the Council of the Department of Anaesthesiology, Obstetrics & Gynecology, Surgery, Orthopedics, Traumatology, Urology, Neurosurgery, Emergency And Intensive Care, Protocol №7/13.05.2025

Head of the Department:

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Associated Prof. N Mirinchev

Approved by a decision of the Faculty Council of the Medical Faculty, Protocol №25/16.06.2025г.

Secretary of the Council of the Medical Faculty: ....

(Chief Assist. Prof. Ruska Nenkova, PhD)

BURGAS STATE UNIVERSITY "PROF. DR. ASEN ZLATAROV"
FACULTY OF MEDICINE
DEPARTMENT OF "SURGERY, OBSTETRICS AND GYNECOLOGY, NERVOUS DISEASES, PHYSIOTHERAPY AND REHABILITATION, ENT DISEASES"

APPROVE!
DEAN:
/Prof. Rumyana Yankova, MD/

CURRICULUM

Course title:	**EAR, NOSE AND THROAT DISEASES**
Specialty:	**MEDICINE**
Professional field:	**7.1. Medicine**
Educational and qualification degree	**MASTER**
Form of education:	**REGULAR**

Burgas, 2026

EXCERPTS FROM THE CURRICULUM

1. GENERAL PARAMETERS OF THE DISCIPLINE			
Total academic workload (hours):	150	**Credits:**	5
Classroom workload	**Extracurricular workload**	**Classroom workload**	**Extracurricular workload**
90	60	3.0	2.0
Type of discipline :	Number of hours per week: /lectures + exercises/	Course:	Semester:
Mandatory	2 + 2 / 2+2	**III and IV**	**VI and VII**

2. LEARNING FORMS					
Classroom workload: 90 hours	**Hours**	**Credits**	**Extracurricular workload: 60 hours**	**Hours**	**Credits**
Lectures	30	1.0	**Consultations** (work with a teacher)	60	2.0
Practical exercises	60	2.0	**Independent work** - Preparing a paper - Preparing exercises	 15 30	 0.5 1.0

3. ASSESSMENT AND CONTROL	
Forms of assessment and control	**Relative share in the overall assessment**
Session assessment: Current assessment	0.6
Semester (current) assessment:	0.4
Forms of semester control: -	
Attendance at classes	0.25
- Current quiz before each exercise	0.25
- Active participation in classes	0.25
- Seminar classes	0.25

ANNOTATION
of the Academic Discipline
"EAR, NOSE AND THROAT DISEASES"

Discipline Annotation

The academic discipline Ear, Nose and Throat Diseases is a core clinical discipline. It provides comprehensive knowledge of the diagnostic approaches, conservative and surgical treatment of diseases affecting the ear, nose, and throat, as well as the rehabilitation of hearing and speech in patients with otorhinolaryngological conditions. The discipline includes the assessment and evaluation of auditory and vestibular function, hearing rehabilitation and hearing aid fitting as specialized professional activities, medical expertise in otorhinolaryngological diseases, evaluation of work capacity, and forensic medical assessment.

Main Objectives of the Curriculum

The curriculum aims to provide systematic knowledge of diseases of the ear, nose, and throat, including their etiology, pathogenesis, classification, pathological-anatomical basis, methods of clinical examination, principles of diagnostic formulation, differential diagnostic planning, treatment planning, and prognosis.

Expected Learning Outcomes

Upon successful completion of the course, students are expected to have acquired the following knowledge and competencies:

- ✓ Comprehensive knowledge of the anatomical structures of the ear, nose, paranasal sinuses, pharynx, larynx, neck, and face.
- ✓ Understanding of the epidemiology, etiology, pathogenesis, and histomorphology of otorhinolaryngological diseases.
- ✓ Familiarity with the fundamental surgical techniques in otorhinolaryngology.
- ✓ Ability to recognize and apply standard methods of physical examination, including otoscopy, anterior, middle, and posterior rhinoscopy, mesopharyngoscopy, and indirect and direct laryngoscopy.
- ✓ Ability to derive preliminary and definitive diagnosis based on patient history and physical examination findings.
- ✓ Ability to interpret clinical symptoms and signs using acquired theoretical and clinical knowledge and to establish an accurate diagnosis.
- ✓ Ability to propose and justify appropriate treatment corresponding to the established diagnosis.
- ✓ Ability to determine the necessity for additional diagnostic investigations required for precise otorhinolaryngological diagnosis, including audiometry, tympanometry, radiographic imaging, computed tomography, magnetic resonance imaging, histological examinations, and other relevant diagnostic methods.
- ✓ Ability to synthesize and summarize clinical findings related to the patient's condition and to select appropriate treatment while considering relevant indications and contraindications.
- ✓ Knowledge and application of contemporary methods for the management of epistaxis.
- ✓ Knowledge of the principles and techniques of cricothyrotomy and tracheotomy.
- ✓ knowledge and application of contemporary approaches in emergency otorhinolaryngology.

- ✓ to know the principles of oncology in otorhinolaryngology.
- ✓ to make an accurate diagnosis and know the methods for treating foreign bodies in ears, nose, lungs and esophagus.
- ✓ to know and apply the methods and means for treating allergic conditions in otorhinolaryngology.
- ✓ to assess the individual risk of developing oncological diseases in otorhinolaryngology.

The student needs to demonstrate specific skills to effectively explain relevant principles and indications to specific diseases in otorhinolaryngology. To be able to predict some of the possible complications based on acquired theoretical and practical skills. To be able to recognize the main diagnostic criteria and, based on the clinical picture, make a possible diagnosis. The acquired knowledge needs to be interpreted and applied to different age groups.

Forms of assessment of acquired knowledge

When assessing students' knowledge, a combination of modern and classical methods is applied. Current control:

- ✓ Oral examination before the practical lesson
- ✓ Tests
- ✓ Seminar classes - discussions
- ✓ Colloquium with test part and oral examination

Semester exam:

- ✓ Practical exam
- ✓ Test
- ✓ Theoretical exam with a written part, stored in the department's archive, and oral part before a commission of habilitated lecturers.

CONTENT OF THE TRAINING PROGRAM

LECTURES

Theme	hours
1. Clinical anatomy of the auditory and vestibular analyzer. Non-inflammatory diseases of the external ear – othematoma, cerumen, foreign bodies in the external auditory canal. Inflammatory diseases of the external ear – otitis externa, perichondritis of the auricle.	2
2. Clinical physiology of the auditory analyzer and of the vestibular analyzer.	2
3. Acute purulent inflammation of the middle ear. Acute otitis in infectious diseases. Acute otitis in infants and young children. Facial nerve palsy. Mastoiditis. Types of hearing loss.	2
4. Chronic otitis - mesotympanitis. Chronic otitis - epitympanitis. Otosclerosis. Treatment of deafness	2
5. Extradural and subdural abscess. Otogenic meningitis. Otogenic sepsis - thrombophlebitis of the sigmoid sinus. Thrombophlebitis of the cavernous sinus. Otogenic cerebral abscess. Otogenic cerebellar abscess.	2
6. Clinical anatomy of the nose and paranasal sinuses. Physiology of the nose and paranasal sinuses. Foreign body in the nose, boil in the entrance of the nose, epistaxis. Fracture of the nasal bones, hematoma and abscess of the nasal septum.	2
7. Acute rhinitis. Chronic rhinitis. Ozena. Maxillary sinusitis - acute, chronic and of dental origin. Frontal sinusitis - acute and chronic.	2
8. Deviation of the nasal septum. Mucocele and pyocele. Orbital complications in sinusitis. Allergic and vasomotor rhinosinusitis. Nasal polyps. Malignant tumors of the nose and paranasal. Malignant tumors of the nose and paranasal sinuses. HIV/AIDS in otorhinolaryngology.	2
9. Anatomy and physiology of the pharynx. Angina - catarrhal, follicular, lacunar. Viral angina, angina in blood diseases, ulcerative-membranous angina of Plaut - Vincent. Chronic pharyngitis. Chronic tonsillitis. Peritonsillar abscess.	2
10. Retropharyngeal abscess. Lateropharyngeal abscess. Clinical anatomy and physiology of the esophagus. Foreign bodies in the trachea and bronchi. Foreign bodies in the esophagus. Burning of the esophagus. Specific diseases in otorhinolaryngology.	2
11. Clinical anatomy of the larynx. Physiology of the larynx. Acute stenosis of the larynx. Chronic stenosis of the larynx. Laryngeal paralysis. Benign tumors of the larynx. Tracheotomy	2

12. Non-inflammatory diseases of the vestibular analyzer - toxic, traumatic, vascular. Inflammatory diseases of the vestibular analyzer. Meniere's disease. Hearing damage from noise and vibration. Occupational diseases of the upper respiratory tract.	2
13. Tumors of the nasopharynx. Tumors of the mesopharynx. Tumors of hypopharynx. Malignant tumors of the larynx.	2
14. Diseases of the larynx, trachea and bronchi. Acute laryngitis. Subchordal laryngitis. Acute epiglottitis. Swelling of the larynx. Abscess of the larynx. Acute stenosing laryngo-tracheitis. Chronic laryngitis. Foreign body in the larynx. Traumatic injuries of the larynx. Laryngeal dyspnea. Acute and chronic stenosis of the trachea. Foreign bodies in the trachea and bronchi	2
15. Diseases of the larynx, esophagus. Benign and malignant neoplasms of the larynx. Neck metastases. Chronic infectious and specific diseases of the URT - scleroma, tuberculosis, syphilis. Occupational diseases in ENT organs. Diseases of the esophagus - diverticulum, spasm, varicose veins, esophagitis and reflux esophagitis. Burning of the esophagus with acids and bases. Stenosis of the esophagus. Foreign bodies in the esophagus.	2
Total:	**30 h.**

EXERCISES

Topic	Hours
1. General rules for examining the ears, nose and throat	2
2. Methods of ear examination	2
3. Methods of hearing examination	2
4. Examination of the vestibular analyzer	2
5. Imaging of the temporal bone	2
6. Methods of examination of the nose and paranasal sinuses	2
7. Anterior and posterior rhinoscopy. (Test. Colloquium)	2
8. Imaging of the paranasal sinuses	2
9. Methods of examination of the oral cavity and pharynx	2
10. Mesopharyngoscopy	2
11. Methods of larynx examination	2
12. Indirect laryngoscopy	2
13. Methods of examination of trachea, bronchi and esophagus	2
14. Basic surgical manipulations and interventions in the treatment of diseases of the ears, nose and throat	2
15. Emergency manipulations in otorhinolaryngology. (Test. Colloquium)	2
16. Othematoma, cerumen, foreign bodies in the external auditory canal. Inflammatory diseases of the external ear - otitis externa, perichondritis of the auricle	2
17. Acute purulent inflammation of the middle ear.	2
18. Chronic otitis - mesotympanitis, epitympanitis.	2
19. Otosclerosis. Meniere's disease.	2
20. Foreign body in the nose, boil in the entrance of the nose, epistaxis. Fracture of the nasal bones.	2
21. Acute rhinitis. Chronic rhinitis. Ozena.	2
22. Maxillary sinusitis - acute, chronic and of dental origin. Frontal sinusitis - acute and chronic.	2
23. Orbital complications in sinusitis. Allergic and vasomotor rhinosinusitis.	2

24. Anginas - catarrhal, follicular, lacunar. Viral anginas, anginas in blood diseases, ulcerative-membranous angina of Plaut - Vincent.	2

25. Chronic tonsillitis. Peritonsillar abscess.	2
26. Subchordal laryngitis. Acute laryngeal stenosis.	2
27. Benign and malignant neoplasms of the larynx.	2
28. Diseases of the esophagus – diverticulum, spasm, varicose veins, esophagitis and reflux esophagitis. Burning of the esophagus with acids and bases.	2
29. Foreign bodies in the trachea and bronchi.	2
30. Colloquium. – final.	2
Total:	**60 h**

SYLLABUS

for the exam in "Ear, Nose and Throat Diseases" for students of the specialty "Medicine"

1. Clinical anatomy of the middle ear
2. Clinical anatomy of the inner ear
3. Physiology of the auditory analyzer
4. Physiology of the vestibular analyzer
5. Non-inflammatory diseases of the external ear – othematoma, cerumen, foreign bodies in the external auditory canal
6. Inflammatory diseases of the external ear – otitis externa, perichondritis of the auricle
7. Acute purulent inflammation of the middle ear
8. Acute otitis in infectious diseases
9. Acute otitis in infants and young children
10. Facial nerve paralysis
11. Mastoiditis
12. Chronic otitis - mesotympanitis
13. Chronic otitis – epitympanitis
14. Non-inflammatory diseases of the vestibular – analyzer toxic,traumatic, vascular.
15. Inflammatory diseases of the vestibular analyzer
16. Otosclerosis
17. Meniere's disease

18. Extradural and subdural abscess
19. Otogenic meningitis
20. Otogenic sepsis - thrombophlebitis of the sigmoid sinus
21. Thrombophlebitis of the cavernous sinus
22. Otogenic cerebral abscess
23. Otogenic cerebellar abscess
24. Types of hearing loss
25. Treatment of deafness
26. Clinical anatomy of the nose and paranasal sinuses
27. Physiology of the nose and paranasal sinuses.
28. Foreign body in the nose, boil in the entrance of the nose, epistaxis
29. Fracture of the nasal bones, hematoma and abscess of the nasal septum
30. Acute rhinitis
31. Chronic rhinitis
32. Ozena
33. Maxillary sinusitis - acute, chronic and of dental origin
34. Frontal sinusitis - acute and chronic
35. Deviation of the nasal septum
36. Mucocele and pyocele
37. Orbital complications in sinusitis
38. Allergic and vasomotor rhinosinusitis
39. Nasal polyps
40. Malignant tumors of the nose and paranasal sinuses
41. Anatomy and physiology of the pharynx
42. Angina - catarrhal, follicular, lacunar
43. Viral angina, angina in blood diseases, ulcerative-membranous angina of Plaut – Vincent
44. Chronic pharyngitis
45. Chronic tonsillitis
46. Peritonsillar abscess
47. Retropharyngeal abscess
48. Lateropharyngeal abscess
49. Tumors of the nasopharynx
50. Tumors of the mesopharynx
51. Tumors of the hypopharynx
52. Clinical anatomy of the larynx
53. Physiology of the larynx
54. Subchordal laryngitis
55. Acute stenosis of the larynx
56. Chronic stenosis of the larynx
57. Tracheotomy
58. Laryngeal paralysis
59. Benign tumors of the larynx
60. Malignant tumors of the larynx
61. Anatomy and physiology of the esophagus

62. Foreign bodies in the trachea and bronchi
63. Foreign bodies in the esophagus
64. Esophageal burn
65. Hearing damage from noise and vibration
66. Occupational diseases of the upper respiratory tract
67. Specific diseases in otorhinolaryngology
68. HIV/AIDS in otorhinolaryngology
69. Otorhinolaryngological symptoms in COVID-19.

LITERATURE FOR PREPARATION

1. Lecture course – Assos. Prof. Dr. D. Petkov, MD
2. Ear, nose, throat diseases, edited by Prof. D. Dimov; Prof. G. Georgiev,1998
3. Clinical-morphological otology, Ivan Tsenev, 1999
4. Clinical-morphological rhinolaryngology, Ivan Tsenev, 2003
5. Handbook of ENT diseases.
6. Endonasal surgery. O. Despotov, K. Dzhambazov, Publishing house ANIMA, 2002

Compiled the curriculum:
(Assos. Prof. Dr. D. Petkov, MD)

The curriculum was discussed and adopted at a meeting of the Department of "Surgery, Obstetrics and Gynecology, Nervous Diseases, Physiotherapy and Rehabilitation, ENT", Protocol No. 21 dated 30.01.2026г.

Head of Department .....
(Assos. Prof. Dr. D. Petkov, MD)

The curriculum was adopted and discussed at the Faculty Council of Medical Faculty, Protocol No. 39 dated 04.02.2026г.

Secretary of the Faculty Council:
(Chief Assistant Prof. Dr. Ruska Nenkova)

BURGAS STATE UNIVERSITY "PROF. D-R ASSEN ZLATAROV"
FACULTY OF MEDICINE
DEPARTMENT OF ANAESTHESIOLOGY, OBSTETRICS AND GYNAECOLOGY, SURGERY, ORTHOPAEDICS AND TRAUMATOLOGY, UROLOGY, NEUROSURGERY, EMERGENCY MEDICINE AND INTENSIVE CARE

Approved by:

DEAN:
(Prof. Rumyana Yankova, PhD)

CURRICULUM

Academic discipline:	**GENERAL AND OPERATIVE SURGERY**
Specialty:	**MEDICINE**
Field of higher education:	**7.1. MEDICINE**
Education and qualification degree:	**MASTER**
Form of education:	**Full-time**

Burgas, 2025

1. GENERAL PARAMETERS OF DISCIPLINE			
Total (academic hours):	270	ECTS:	9

Auditorium classes	**Non-auditorium classes**	**Auditorium ECTS**	**Non-auditorium ECTS**
165	105	5.5	3.5

Type of subject:	**Number of hours per week: (lectures + practicals)**	**Course:**	**Semester:**
Mandatory	2+3/2+4	III	V+VI

2. STUDY FORMS

Auditorium classes:	**Academic hours**	**ECTS**	**Non-auditorium classes:**	**Academic hours**	**ECTS**
Lectures	60	2.0	**Consultations** **Work with a teacher**	60	2.0
Seminars			**Self- study work**		
Practical sessions	105	3.5	- report presenting - preparation of exercises	15 30	0.5 1.0

3. ASSESSMENT AND CONTROL

Assessment and Control Forms	**Relative share in the total score**
Ongoing assessment during the session	0.4
Semester (Ongoing) Assessment:	0.6
Forms of semester control:	
- Attendance in classes	0.25
- Ongoing oral quizzes before practical sessions	0.25
- Active participation in Educational/Scientific activities	0.25
- Defence of practical exercise protocols	0.25

ANNOTATION

The discipline "General and Operative Surgery" provides in-depth knowledge of the patterns and mechanisms of occurrence, development, and manifestation, as well as the main methods of clinical examination of patients with surgical diseases. It includes the study of the semiotics and syndromology of surgical conditions. The primary goal of the training is to master the methodology of local examination of the surgical patient based on a detailed medical history, thorough clinical examination, development of a diagnostic and treatment plan, performing and interpreting laboratory tests, understanding the rules and handling of surgical instruments, and mastering basic surgical procedures and operations.

Establishing a surgical diagnosis of a patient is justified through analysis of the identified surgical symptoms and syndromes in combination with the most important clinical signs. Studying this subject lays the foundation for advanced courses in specialized surgery.

A key aspect of student training in general and operative surgery is bedside practice — refining communication techniques with patients and mastering physical examination techniques to the extent of detecting pathological changes. Students also have their first experience working in the operating room.

Main objectives of the curriculum:

- Acquisition of clinical theoretical knowledge
- Development of essential practical surgical skills
- Application of antisepsis and asepsis
- Providing first aid in cases of bleeding and clinical death
- Understanding basic principles for treating wounds, burns, frostbite, and mechanical injuries
- Determining blood types
- Performing gastric intubation and bladder catheterization
- Administering injections
- Applying bandages
- Performing tissue separation and joining
- Achieving surgical hemostasis

Teaching methods:
Traditional and innovative teaching methods, including lectures, discussions, debates, multimedia presentations, teamwork, and others.

Expected Outcomes:

Theoretical knowledge:

- Understanding the methodology and specifics of examining a surgical patient
- Knowledge of the achievements of modern surgical science and the patterns and mechanisms of occurrence, development, and manifestation of surgical diseases
- Knowledge of the main methods of clinical examination in surgical patients
- Identifying the symptoms and syndromes of surgical diseases

- Mastery of the rules for formulating a surgical diagnosis in a patient, based on the analysis of identified surgical symptoms and syndromes, combined with the most important clinical signs

Practical skills:

- Mastering the methodology of local physical examination of surgical patients, based on detailed medical history and thorough clinical examination
- Performing and evaluating various paraclinical investigations
- Mastering basic surgical procedures: administering injections, catheterizations, tubes insertion, applying dressings, blood group testing, performing surgical sutures, removing stitches, and treating different types of wounds

Forms of assessment of acquired knowledge:

A combination of modern and traditional methods is used to assess student knowledge.

Ongoing assessment:

- Oral questioning before practical sessions
- Tests
- Seminar discussions
- Evaluation and signing of protocols at the end of each practical session
- Colloquium with a written test and oral examination

Final (semester) examination:

- Practical exam
- Test
- Theoretical exam with a written component (archived in the department) and an oral component before a panel of habilitated instructors

CURRICULUM CONTENT

LECTURES

Topic	Hours
1. Brief historical overview of the development of surgery. Surgery in Bulgaria.	2
2. Facilities and resources for conducting surgical treatment. Organization and planning of a surgical department/clinic. Surgical instruments, suturing materials, dressing and supplementary materials, surgical attire.	2
3. Antisepsis and asepsis.	2
4. Surgical operations. Modern technical apparatus and techniques.	2
5. Antibiotics and sulfonamides in modern surgery.	2
6. Basic procedures and interventions in surgery. Puncture. Intubation.	2
7. Basic surgical procedures – tomy, incision, excision, stoma, anastomosis, bypass, resection, amputation.	2
8. Basic principles of transplantation. Clinical organ transplantation.	2
9. Anesthesia. Historical background.	2
10. Local anesthesia. Pain and its treatment.	2
11. Resuscitation.	2
12. Shock. Clinical death.	2
13. Traumatic diseases. Closed injuries.	2
14. Traumatic diseases. Open injuries – wounds.	2
15. Thermal injury.	2
16. Hemorrhage.	2
17. Hemostasis.	2
18. Blood transfusion. Surgery, AIDS, and Hepatitis B.	2
19. Surgical infection: general principles, classification.	2
20. Acute purulent infections – abscess and phlegmon.	2
21. Acute localized purulent infections. Purulent infections of the skin and its appendages.	2
22. Purulent infections of the musculoskeletal system.	2
23. Generalized purulent infection. Sepsis.	2
24. Anaerobic infections (tetanus, gas gangrene). Putrefactive infections.	2
25. Surgical oncology. Tumor etiology. Classification.	2
26. Morphology and biology of tumors – growth, precancerous conditions. Early carcinoma. Paraneoplastic syndromes.	2
27. Diagnosis and treatment of tumors.	2
28. Necrosis and gangrene. Ulcers and fistulas.	2
29. Acute surgical abdomen – general considerations.	2
30. Minimally invasive (endoscopic) surgery and endoscopic diagnostic methods	2
Total:	60

PRACTICAL EXERCISES

Topic	Hours
1. Structure of the surgical department – ward, dressing rooms, treatment and resuscitation rooms, operating block. General rules for working with patients. Medical ethics. Taking patient history – methodology and components of history-taking.	4
2. General status. Physical and instrumental examination methods. Gender, apparent age, bed positioning, mental state, skin and visible mucous membranes, skeletal and muscular systems, nutritional status.	4
3. Local status. Local symptoms of acute inflammation and tumor formations.	4
4. Examination of the head. Main diseases and injuries. Cranio-cerebral trauma – concussion, contusion, cerebral compression.	4
5. Examination of the neck. Congenital diseases, lymph nodes, thyroid gland. Neck injuries.	4
6. Examination of the thorax. Chest trauma, thoracic wall. Hemothorax, pneumothorax, cardiac tamponade.	4
7. Examination of the breast. Inflammatory and tumor diseases. Breast cancer.	4
8. Abdominal examination. Boundaries and regions. Inspection, palpation, percussion, auscultation, measurements.	3
9. Examination of a patient with acute surgical abdomen (ASA) – acute inflammatory conditions, intestinal obstruction, acute vascular diseases, trauma.	5
10. Examination of a patient with hernia of the anterior abdominal wall. Types of hernias – umbilical, inguinal, femoral, postoperative. Incarcerated hernia.	4
11. Intensive care. Fluid-electrolyte and acid-base balance. Energy balance. Enteral and parenteral nutrition. Monitoring during intensive care.	4
12. Cardiopulmonary resuscitation. Clinical death – definition, diagnosis. Shock. Respiratory failure.	3
13. Asepsis and antisepsis. Operating room.	2
14. Operative surgery. Surgical instruments, needles and sutures, knots.	2
15. Colloquium.	3
16. Examination of the perineum, anus, and rectum. Rectal examination.	3
17. Examination of a patient with a urological condition. Urinary bladder catheterization.	4
18. Limb examination. Examination of blood vessels and lymphatic system.	4
19. Types of wounds. Wound management. Healing processes.	4
20. Hemorrhage. Provisional and definitive hemostasis.	3
21. Blood groups. Blood transfusion – indications, technique.	3
22. Gastric and duodenal intubation. Sengstaken-Blakemore tube. Enemas. Injections.	4
23. Work in the dressing room. Rules for handling sterile instruments and materials. Suture removal.	4
24. Purulent-septic surgery. Acute purulent infections.	3
25. Bandaging techniques – head, upper limb.	3

Topic	Hours
26. Bandaging techniques – chest, lower limb.	3
27. General anesthesia. Preoperative and anesthesia preparation. Pre-anesthetic exam. Premedication. Inhalation and intravenous anesthetics. Muscle relaxants. Balanced multi-component endotracheal general anesthesia. Intraoperative monitoring.	4
28. Regional anesthesia. Local anesthetics. Spinal and epidural anesthesia. Anesthesia complications.	4
29. Surgical technique. Tissue dissection, hemostasis, tissue approximation.	3
30. Examination of a patient with burns	3
Total:	105

EXAM QUESTIONNAIRE

SYLLABUS

for the exam in "General and Operative Surgery"
for students in the "Medicine" specialty

1. Historical data on the development of surgery. Surgery in Bulgaria.
2. Organization and planning of the surgical department/clinic.
3. Antiseptics and aseptics – historical data. Antiseptics.
4. Aseptics.
5. Preparation of the surgical team for surgery. Preparation of the surgical field. Hospitalism.
6. Surgical deontology.
7. Surgical operation. Types of operations.
8. Antibiotics and sulfonamides in modern surgery.
9. Basic manipulations and interventions in surgery. Puncture. Puncture of vessels and anatomical cavities.
10. Puncture of newly formed cavities – abscess (hot and cold) and hematoma.
11. Basic manipulations and interventions in surgery. Tomy. Stomy.
12. Basic manipulations and interventions in surgery. Incision. Excision. Trepanation.
13. Basic manipulations and interventions in surgery. Anastomosis. Bypass.
14. Basic manipulations and interventions in surgery. Resection. Amputation.
15. Basic principles of transplantation.
16. Anesthesia – historical data. Definition and classification.
17. Inhalational anesthesia. Agents for inhalational anesthesia. Muscle relaxants. Devices for inhalational anesthesia.
18. Preparation of the patient for inhalational anesthesia. Execution and complications of inhalational anesthesia.
19. Local anesthesia. Venous anesthesia. Rectal anesthesia. Special method for analgesia close to general anesthesia.
20. Resuscitation. General impact of trauma on the body. Water and electrolyte status. Energy balance. Acid-base equilibrium.
21. Shock.
22. Clinical death.
23. Traumatic diseases. Clinical classification and pathophysiology of mechanical trauma. Clinical picture.

24. Closed mechanical traumas. Contusion. Compression. Traumatic toxicosis (crush syndrome). Traumatic decollement.
25. Closed mechanical traumas. Distortion, dislocation, rupture.
26. Closed mechanical traumas. Commotio, contusio, compressio cerebri.
27. Closed chest and abdominal traumas.
28. Bone fracture.
29. Open trauma – wound.
30. Lacerated, contused, lacerocontused wound; avulsion, scalp.
31. Incised, chopped, and bite wounds.
32. Gunshot and stab wounds.
33. Wound healing.
34. Wound treatment.
35. Thermal trauma. Heat stroke and sunstroke. Ombredanne syndrome.
36. Burns.
37. Frostbite. General body cooling.
38. Electrical trauma. Chemical burns.
39. Bleeding. Pathophysiology. Changes in organs and microcirculation. Classification. Clinical picture. Treatment.
40. Spontaneous (natural) hemostasis.
41. Artificial hemostasis.
42. Blood transfusion. Historical data. ABO and Rh blood group systems.
43. Determination of blood groups. Blood transfusion procedure. Selection of donor blood for transfusion.
44. Blood transfusion. Clinical manifestations of immune hemolytic reactions. Errors and complications in blood transfusion.
45. Blood transfusion. Effects of transfused blood. Types of blood transfusions. Indications and contraindications. Blood products.
46. Surgery, AIDS, and Hepatitis B.
47. Surgical infection. Pathophysiological and morphological processes in surgical infections. Causative agents of surgical infections.
48. Development of surgical infection. Conditions from the micro- and macro-organism.
49. Classification of surgical infection. Acute purulent infection – abscess.
50. Acute purulent infection – phlegmon. Chronic purulent infection.
51. Acute local purulent infection. Purulent infections of the skin and its appendages – folliculitis, furuncle, carbuncle, hidradenitis.
52. Purulent infection of the lymphatic system. Lymphangitis and lymphadenitis.
53. Purulent infection of blood vessels. Inflammation of arteries. Inflammation of veins.
54. Purulent arthritis and bursitis.
55. Tendovaginitis.
56. Osteomyelitis.
57. Panaritium. Types, clinic, treatment.
58. General purulent infection (sepsis) – classification, etiology, and pathogenesis.
59. General purulent infection (sepsis) – clinic, diagnosis, and treatment.
60. Acute putrid infection.
61. Anaerobic gas infection.
62. Tetanus.
63. Surgical oncology. Basic definitions. Epidemiology of cancer. Biology of malignant transformation.
64. Modern theories of carcinogenesis.

65. Etiology of malignant tumors. Genetic aspects of cancer. Tumors with hereditary predisposition – hereditary tumors.
66. Morphology and biology of tumor growth. Precancers. Early cancer. Paraneoplastic syndromes.
67. Diagnosis of tumor diseases. Basic principles, apparatus and instrumental methods. Morphological diagnosis. Tumor markers.
68. Clinical classification of malignant tumors. Screening programs.
69. Surgical treatment methods in oncology. Special methods. Ablastic and antiblastic.
70. Combined treatment methods – radiotherapy, chemotherapy, hormone therapy, and immunotherapy in oncology.
71. Classification of tumors.
72. Tumors of epithelial origin. Pigment tumors.
73. Tumors of mesenchymal origin, hemoblastoses, and lymphoreticular tumors.
74. Tumors of nervous tissue and APUD system.
75. Mixed tumors and tumors from embryonic remnants.
76. Necrosis and gangrene. Chronic arterial insufficiency.
77. General theory of ulcers.
78. Fistulas.
79. Acute surgical abdomen. Definition, etiology, clinical picture.
80. Acute surgical abdomen. Clinical picture of acute surgical abdomen of inflammatory origin.
81. Acute surgical abdomen. Clinical picture of acute surgical abdomen of perforative origin.
82. Acute surgical abdomen. Clinical picture of acute surgical abdomen in intestinal obstruction.
83. Bleeding from the upper gastrointestinal tract. General considerations, diagnosis, treatment.
84. Bleeding from the lower gastrointestinal tract. General considerations, diagnosis, treatment.
85. Laparoscopic surgery. Basic principles. Main indications. Modern achievements. Economic results.
86. Endoscopic technique. Diagnostic and therapeutic endoscopy.

Syllabus for Practical Exam in General and Operative Surgery

1. Surgical history taking.
2. Taking general status. Physical and instrumental methods for patient examination.
3. Taking local status — inspection, palpation, percussion, auscultation, mensuration.
4. Local status of acute inflammation.
5. Local status of a tumor formation.
6. Examination of the head. Examination in cranio-cerebral injuries.
7. Examination of the neck.
8. Examination of a patient with thyroid disease.
9. Examination of the chest.
10. Examination of the mammary gland.
11. Examination of the abdomen.
12. Examination of a patient with acute abdominal conditions (AAC).
13. Examination of a patient with hernia of the anterior abdominal wall.
14. Examination of the anorectal region. Digital rectal examination.
15. Examination of a urological patient.

16. Examination of limbs.
17. Examination of blood vessels. Trendelenburg and Delbet-Perthes tests.
18. Examination of a patient with a wound.
19. Temporary hemostasis.
20. Definitive hemostasis.
21. Blood transfusion technique.
22. Bandage dressings – head, chest.
23. Bandage dressings – upper and lower limb.
24. Gastric and duodenal intubation. Blakemore tube.
25. Injections. Enemas.
26. Examination of a patient with purulent infection of soft tissues – abscess, phlegmon.
27. Asepsis – practical implementation.
28. Antisepsis – practical implementation.
29. Dressing of aseptic and septic wounds. Removal of sutures.
30. Surgical instruments – types and usage.
31. Technique of tissue dissection – skin, fascia, muscles, peritoneum.
32. Technique of tissue joining.
33. Measures in clinical death.
34. Treatment of fresh burns.
35. Primary surgical treatment of wounds. Early and late secondary suturing.

REFERENCES

Mandatory

1. *General Surgery* – edited by Prof. V. Dimitrova, 2007
2. *Manual for Practical Exercises in General and Operative Surgery* – edited by Prof. V. Dimitrova, 2004
3. *General and Operative Surgery* – edited by Prof. R. Gaidarski, 1994
4. *Propaedeutics of Surgical Diseases* – edited by Prof. G. Milkov, 1989
5. *Propaedeutics of Surgical Diseases* – edited by Prof. K. Enev, 1983
6. *Propaedeutics of Surgical Diseases* – edited by Prof. G. Ganchev, 1981
7. *Manual for Practical Exercises in Anesthesiology and Resuscitation* – edited by Prof. Y. Yordanov, 1986

Compiled by:
(Prof. Dr. Valentin Vasilev, MD)

Approved by a decision of the Council of the Department of ..., Protocol № .../...2025

Head of department:
(.....)

Approved by a decision of the Faculty Council of the Medica Faculty, Protocol № 26/08.07.2025

Secretary of the Council of the Medical Faculty:
(Chief Assist. Prof. Ruska Nenkova, PhD)

BURGAS STATE UNIVERSITY "PROF. DR. ASSEN ZLATAROV"
FACULTY OF MEDICINE
DEPARTMENT "INTERNAL DISEASES, SOCIAL MEDICINE, PHYSIOTHERAPY AND REHABILITATION, DISASTER MEDICINE"

Approved by!

DEAN:
(Prof. Rumyana Yankova, PhD)

CURRICULUM

Academic discipline:	**GENERAL MEDICINE**
Specialty:	**MEDICINE**
Field of higher education:	**7.1. MEDICINE**
Educational and qualification degree:	**MASTER**
Form of education:	**Full-time**

Burgas, 2026

EXCERPTS FROM THE CURRICULUM (STUDY PLAN)

1. GENERAL PARAMETERS OF THE COURSE			
Total Student Workload (hours):	60	**Credits:**	3

Contact Hours	**Non-contact Hours**	**Contact Hours**	**Non-contact Hours**
30	30	1.5	1.5
Type of Course:	**Number of Hours per Week (Lectures + Practical Classes):**	*Year of Study*	*Semester*
Compulsory	1+1	**III**	**VI**

2. FORMS OF INSTRUCTION					
Contact Hours:	**Hours**	**Credits**	**Non-contact Hours**	**Hours**	**Credits**
Lectures	30	1.5	**Consultations** (work with an instructor)	60	1.5
Practical Classes	30	1.5	**Independent Work** - Preparation of a written assignment – Preparation for practical classes	40 20	1 0.5

3. ASSESSMENT AND CONTROL	
Forms of Assessment and Control	**Relative Weight in the Final Grade**
End-of-term Assessment: Continuous Assessment	**0.6**
Semester-based (Continuous) Assessment:	**0.4**
Forms of Semester Control:	
• Attendance at classes	0.25
• Ongoing oral questioning before each practical class	0.25
• Active participation in classes	0.25
• Presentation and approval of practical protocols	0.25

ANNOTATION

Of the Course

„GENERAL MEDICINE"

Purpose of the course:
General Medicine is an academic and scientific discipline and a clinical specialty with its own educational content, research framework, evidence base, and clinical practice, all oriented toward primary health care. The course presents the philosophy, role, and significance of General Medicine as a clinical discipline, focusing on outpatient care in addressing the health problems of the community.

The main objective of the course is to provide students with professional competence, understood as a specific combination of knowledge, skills, and professional attitudes, which enables the delivery of high-quality, effective, and efficient care within the framework of primary health care.

Learning Objectives

- ✓ To provide knowledge for the effective management of primary health care, placing the individual—both healthy and ill—at the center of medical practice.
- ✓ To develop specific skills for problem-solving in primary health care.
- ✓ To apply a comprehensive approach in the provision of medical care.
- ✓ To employ a holistic approach in all professional activities, based on the bio-psycho-social nature of the human being.

Expected Learning Outcomes
Upon completion of the course in General Medicine, students should be able to:

- Understand the essence of General Medicine as a medical specialty, as well as the role and position of the general practitioner within the healthcare system.
- Be familiar with the principles of organization of outpatient (primary) medical care and the logic of the healthcare system as defined by the regulatory framework.
- Understand the legally regulated relationships with the National Health Insurance Fund (NHIF) and the Regional Health Inspectorates (RHI).
- Acquire skills for effective communication with patients.
- Develop competencies for performing the core activities in the different types of outpatient practices providing primary health care.
- Be familiar with contemporary therapeutic approaches.
- Manage a wide range of health problems in patients of different age groups and with diseases affecting various organs and systems.
- Coordinate patient care with other medical specialists at the level of primary health care.
- Be familiar with preventive care programs.
- Construct diagnostic and therapeutic algorithms and guide the care pathway of patients with unstructured health problems in general medical practice.
- Be aware of the opportunities and the need for palliative care and psychological support in specific patient groups.

Teaching Methods

Traditional and innovative teaching methods are employed, including lectures, guided discussions, debates, multimedia presentations, teamwork, and other interactive approaches.

Forms of Independent Work

Course papers of a review type, individual problem-solving assignments based on topics from practical classes, completion of tests, and colloquia.

Forms of Assessment of Acquired Knowledge

The assessment of students' knowledge is based on a combination of contemporary and classical evaluation methods.

Continuous Assessment

- Oral questioning prior to each practical class
- Tests
- Seminar-based discussions
- Colloquium including a written test component and oral questioning

Semester Examination

- Written test
- Theoretical examination consisting of a written component, archived at the department, and an oral component conducted before a committee of habilitated academic staff.

COURSE CONTENT

LECTURES

Topic	Hours
1. Health Care Reforms and Primary Health Care. The Role and Position of Primary Health Care within the Health Care System.	2
2. The General Practitioner in the Health Care System – Key Characteristics, Responsibilities, Professional Competence, and Workflow Algorithm.	2
3. Types of Outpatient Health Care Facilities. Advantages and Disadvantages of Individual and Group Practices. Quality of Primary Health Care in Bulgaria.	2
4. Rules of Good Medical Practice for General Practitioners in Bulgaria. The Basic Package of Primary Health Care and Specialized Outpatient Medical Care (SOC).	2
5. Current State of Financing of Primary Health Care in Bulgaria. Nature and Importance of Regulatory Standards in Primary Health Care. Information Systems and Reporting in Primary Health Care.	2
6. Communication Skills of the General Practitioner. Continuing Medical Education. Medical Standards in General Medical Practice.	2
7. Prevention and Health Promotion in Primary Health Care (PHC). Dispensary Care. Groups of Diseases Subject to Dispensary Follow-up. Home Visits.	2
8. Clinical Medicine in General Medical Practice. Medically Unexplained Symp-	2

toms – Key Aspects, Consequences, and Therapeutic Approaches.	
9. Clinical Presentation, Diagnosis, Treatment, Referral, and Follow-up of Pulmonary Diseases in Primary Health Care (PHC).	2
10. Clinical Presentation, Diagnosis, Treatment, Referral, and Follow-up of Cardiovascular Diseases in Primary Health Care (PHC).	2
11. Clinical Presentation, Diagnosis, Treatment, Referral, and Follow-up of Endocrine System Diseases in Primary Health Care (PHC).	2
12. Gastroenterology, Hepatology, and Hematology for General Practitioners.	2
13. Practical Aspects and Specific Issues in General Medical Practice Related to Diseases of the Urinary System and Rheumatic Diseases.	2
14. Basic Surgical Aspects of General Medical Practice. Orthopedics and Traumatology.	2
15. Fundamental Aspects of Infectious Diseases. General Principles for Performing Basic Procedures in General Practice.	1
16. The Child in General Medical Practice. The Child as a Patient in General Practice – Key Principles and Preventive Care in the Primary Care Setting.	1
Total:	**30 h.**

SEMINARS AND PRACTICAL CLASSES

Topic	Hours
1. Health Care Reforms and Primary Health Care. The Role and Position of Primary Health Care within the Health Care System.	2
2. The General Practitioner in the Health Care System – Key Characteristics, Responsibilities, Professional Competence, and Workflow Algorithm.	2
3. Types of Outpatient Health Care Facilities. Advantages and Disadvantages of Individual and Group Practices. Quality of Primary Health Care in Bulgaria.	2
4. Rules of Good Medical Practice for General Practitioners in Bulgaria. The Basic Package of Primary Health Care and Specialized Outpatient Medical Care (SOC).	2
5. Current State of Financing of Primary Health Care in Bulgaria. Nature and Importance of Regulatory Standards in Primary Health Care. Information Systems and Reporting in Primary Health Care.	2
6. Communication Skills of the General Practitioner. Continuing Medical Education. Medical Standards in General Medical Practice.	2
7. Prevention and Health Promotion in Primary Health Care (PHC). Dispensary Care. Groups of Diseases Subject to Dispensary Follow-up. Home Visits.	2
8. Clinical Medicine in General Medical Practice. Medically Unexplained Symptoms – Key Aspects, Consequences, and Therapeutic Approaches.	2
9. Clinical Presentation, Diagnosis, Treatment, Referral, and Follow-up of Pulmonary Diseases in Primary Health Care (PHC).	2

10. Clinical Presentation, Diagnosis, Treatment, Referral, and Follow-up of Cardiovascular Diseases in Primary Health Care (PHC).	2
11. Clinical Presentation, Diagnosis, Treatment, Referral, and Follow-up of Endocrine System Diseases in Primary Health Care (PHC).	2
12. Gastroenterology, Hepatology, and Hematology for General Practitioners.	2
13. Practical Aspects and Specific Issues in General Medical Practice Related to Diseases of the Urinary System and Rheumatic Diseases.	2
14. Basic Surgical Aspects of General Medical Practice. Orthopedics and Traumatology.	2
15. Fundamental Aspects of Infectious Diseases. General Principles for Performing Basic Procedures in General Practice.	1
16. The Child in General Medical Practice. The Child as a Patient in General Practice – Key Principles and Preventive Care in the Primary Care Setting.	1
Total:	**30 h.**

Syllabus for the Semester Examination in General Medicine

1. Health Care Reforms and Primary Health Care.
2. The Role and Position of Primary Health Care within the Health Care System.
3. The General Practitioner in the Health Care System – Key Characteristics, Responsibilities, Professional Competence, and Workflow Algorithm.
4. Types of Outpatient Health Care Facilities.
5. Advantages and Disadvantages of Individual and Group Practices.
6. Quality of Primary Health Care (PHC) in Bulgaria.
7. Rules of Good Medical Practice for General Practitioners in Bulgaria.
8. The Basic Package of Primary Health Care (PHC) and Specialized Outpatient Medical Care (SOC).
9. Current State of Financing of Primary Health Care in Bulgaria. Nature and Importance of Regulatory Standards in Primary Health Care. Information Systems and Reporting in Primary Health Care.
10. Communication Skills of the General Practitioner.
11. Continuing Medical Education.
12. Medical Standards in General Medical Practice.
13. Prevention and Health Promotion in Primary Health Care.
14. Dispensary Care. Groups of Diseases Subject to Dispensary Follow-up. Home Visits.
15. Clinical Medicine in General Medical Practice. Medically Unexplained Symptoms – Key Aspects, Consequences, and Therapeutic Approaches.
16. Clinical Presentation, Diagnosis, Treatment, Referral, and Follow-up of Pulmonary Diseases in Primary Health Care.
17. Clinical Presentation, Diagnosis, Treatment, Referral, and Follow-up of Cardiovascular Diseases in Primary Health Care.

18. Clinical Presentation, Diagnosis, Treatment, Referral, and Follow-up of Endocrine System Diseases in Primary Health Care.
19. Gastroenterology, Hepatology, and Hematology for General Practitioners.
20. Practical Aspects and Specific Issues in General Medical Practice Related to Diseases of the Urinary System and Rheumatic Diseases.
21. Basic Surgical Aspects of General Medical Practice. Orthopedics and Traumatology.
22. Fundamental Aspects of Infectious Diseases.
23. General Principles for Performing Basic Procedures in General Practice.
24. The Child in General Medical Practice. The Child as a Patient in General Practice – Key Principles and Preventive Care in the Primary Care Setting.

Literature for Exam Preparation

Free Databases

- PubMed (https://pubmed.ncbi.nlm.nih.gov/): Vast repository of peer-reviewed medical literature with millions of citations; many open-access full texts available.[1][2]

- MedlinePlus (https://medlineplus.gov/): Offers patient-friendly explanations and links to scientific studies for foundational medical topics.[2]

- DOAJ (Directory of Open Access Journals) (https://doaj.org/): Curates free, full-text scientific journals in medicine, searchable by keywords like "general medicine".[3]

University-Affiliated Platforms

- AccessMedicine (https://accessmedicine.mhmedical.com/): Features textbooks, videos, and clinical tools from McGraw-Hill; often accessible via institutional login for students.[2]

- ClinicalKey Medical Education (https://www.elsevier.com/solutions/clinicalkey-medical-education): Includes ebooks, journals, and procedures for med students; trial access common.[1]

- AMBOSS (via university portals like mu-plovdiv.bg): Interactive platform with Qbanks and explanations for English-taught medical curricula.[2]

Open Educational Resources

- OpenStax (https://openstax.org/subjects/medicine): Free textbooks on anatomy, physiology, and related fields suitable for preclinical training.[4]

- Khan Academy Medicine (https://www.khanacademy.org/science/health-and-medicine): Video lessons and quizzes on core topics like cardiovascular and respiratory systems.[5]

1. https://drstamenov.com/wp-content/uploads/2020/03/Обща-медицина-по-Наредба-34пр.pdf

2. https://ebox.nbu.bg/med13/ne7/New folder17.X_Glava_Navigator_na_el._zdrave.pdf

3. https://cml.mu-sofia.bg/bg/spisania/obshta-meditsina/

4. https://astoria-academy.com/course/английски-език-за-медици/

5. https://cml.mu-sofia.bg/bg/uslugi/obuchenia-i-**kursove/**

Prepared by:

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The curriculum was discussed and approved at a meeting of the Department of Internal Medicine, Social Medicine, Physiotherapy and Rehabilitation, and Disaster Medicine

Minutes No. 13 / 28.01.2026 г.

Head of Department: ..

(Prof. Dr. Vladimir Gonchev, PhD)

The curriculum was discussed and approved by the Faculty Council of the Faculty of Medicine,

Minutes No. 39 / 04.02.2026 г.

Secretary of the Faculty Council: .

(Chief Assistant Prof. Dr. Ruska Nenkova)

BURGAS STATE UNIVERSITY "PROF. DR ASSEN ZLATAROV"
FACULTY OF MEDICINE

DEPARTMENT OF ANATOMY, HISTOLOGY AND EMBRYOLOGY, PATHOLOGY, FORENSIC MEDICINE AND DEONTOLOGY

Approved by:
DEAN
/Prof. Rumyana Yankova-Avramova/

CURRICULUM

Course Title:	GENERAL PATHOLOGY
Degree Programme:	MEDICINE
Professional Field	7.1 MEDICINE
Educational Qualification Degree:	MASTER
Form of Education:	FULL-TIME

Burgas, 2026

EXTRACTS FROM THE CURRICULUM

1. GENERAL PARAMETERS OF THE COURSE

Total workload (hours):	**180**	***Credits:***	**6**
Contact hours:	Independent (self-directed) study hours:	Contact workload	Independent study workload
105	**75**	**3.5**	**2.5**
Type of course	**Weekly workload (lectures + practical classes):**	**Year of study::**	**Semester:**
Compulsory	**1 + 2 and 2 + 2 hours**	**III**	**V и VI**

2. FORMS OF TEACHING AND LEARNING

Contact hours:	***Hours***	***Credits:***	Independent (self-directed) study hours:	***Hours***	***Credits:***
Lectures	**45**	**1,5**	Consultations (tutorials with academic staff)	**25**	**0.8**
Practical classes	**60**	**2**	Self-directed study	**50**	**1.7**

3. ASSESSMENT AND QUALITY CONTROL

Forms of assessment and their weighting in the final grade	***Weighting within continuous assessmen***
Final (sessional) assessment:- Theoretical examination (written and oral) and Practical examination	**0.4**
Continuous (semester-based) assessment:	**0.6**
Forms of continuous assessment:	
- Colloquium (written component and oral examination)	**0.7**
- Seminar and practical classes – practical assessment and test-based evaluation	**0.3**

ANNOTATION

of the Course "General Pathology"**

Purpose of the Course

The course **General Pathology** is intended for third-year students enrolled in the Master's degree programme in **Medicine**.

Aims

The course **General Pathology** provides opportunities for the acquisition of knowledge and skills related to intracellular accumulations of lipids, proteins and pigments; adaptive processes; accumulation of fibrinoid, hyaline, amyloid, calcium salts and sodium urates in the extracellular matrix; necrosis; disorders of blood circulation; inflammation; pathology of the immune system; and tumours.

Structure of the Course Content

The lecture course includes:

- ✓ intracellular accumulations of lipids, proteins and pigments;
- ✓ adaptive and compensatory processes;
- ✓ accumulation of fibrinoid, hyaline, amyloid, calcium salts and sodium urates in the extracellular matrix;клетъчна
- ✓ cell death – necrosis and apoptosis;
- ✓ disorders of blood circulation;
- ✓ inflammation and pathology of the immune system;
- ✓ tumours.

Practical Skills and Knowledge Acquired in the Course

- ✓ Acquisition of in-depth morphological knowledge of the main pathological processes across all sections of general pathology.
- ✓ Detailed understanding of the theoretical foundations of the origin, growth and development of tumours..
- ✓ Mastery of the terminology related to precancerous conditions, benign and malignant tumours..
- ✓ Acquisition of principles for biopsy sampling, completion of the relevant documentation, and development of skills for objective communication of clinical findings to the pathologist.
- ✓ Development of a high level of medical culture

Teaching Aids:

Light microscopy specimens, multimedia presentations, discussions, and solving practical, clinically oriented tasks.

Assessment of Acquired Knowledge

The assessment of students' knowledge is based on a combination of modern and classical methods..

Continuous assessment::

- ✓ Oral examination during practical classes
- ✓ Seminar sessions – practical assessment and test component
- ✓ Colloquium with a written component and oral examination

End-of-semester examination:

- ✓ Practical examination
- ✓ Theoretical examination consisting of a written component, archived at the department, and an oral component

Expected Learning Outcomes

Upon completion of the course, students are expected to acquire the following knowledge and skills:

- ✓ Understanding of the main pathological processes and structural changes in individual nosological entities.
- ✓ Acquisition of in-depth morphological knowledge across all sections of general pathology, enabling sustained mastery of clinical disciplines and the development of high medical culture.

CONTENT OF THE CURRICULUM:

THEMATIC PLAN OF LECTURES – WINTER AND SUMMER SEMESTERS

1.	History, subject and objectives of pathology. Macroscopic methods in pathology.	1 hour
2.	Methods of pathology: microscopic, histochemical and immunohistochemical methods.	2 hours
3.	Cell pathology. Pathomorphological types of changes in the injured cell.	2 hours
4.	Fatty and carbohydrate degeneration.	2 hours
5.	Exogenous and endogenous pigments. Types of jaundice.	2 hours
6.	Pathology of connective tissue. Mucoid and fibrinoid degeneration.	2 hours
7.	Hyaline and amyloid degeneration.	2 hours
8.	Necrosis.	2 hours
9.	Disorders of blood circulation: left-sided and right-sided, acute and chronic heart failure.	2 hours
10.	Disorders of blood circulation: arterial and venous hyperaemia. Bleeding and haemorrhage. Plasma leakage.	2 hours
11.	Disorders of blood circulation: rheological disorders. Thrombosis. Disseminated intravascular coagulation (DIC syndrome).	2 hours
12.	Disorders of blood circulation: embolism. Shock. Disorders of lymphatic circulation.	3 hours
13.	Inflammation: definition, aetiology, phases. Pathogenesis and morphogenesis of inflammation. Exudative inflammation.	2 hours
14.	Inflammation: morphological characteristics of diffuse interstitial and granulomatous productive inflammation. Immunopathology.	2 hours
15.	Compensatory and adaptive processes: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia.	2 hours
16.	Regeneration: complete and incomplete regeneration. Regeneration of different tissues and organs.	2 hours
17.	Tumours: definition and nature of tumour growth; morphological and other characteristics of tumours. Aetiology of tumours.	2 hours
18.	Tumours: biological behaviour of tumours – benign and malignant tumours.	2 hours

19.	Tumours: immunohistochemical markers for differential diagnosis of certain tumours. Other diagnostic methods for tumours.	2 hours
20.	Tumours: terminology and classification of tumours. Tumours of epithelia origin.	2 hours
21.	Tumours: tumours of mesenchymal origin.	2 hours
22.	Tumours: tumours of the nervous system. Teratomas. Pigmented tumours.	2 hours
23.	Disorders of foetal development. Congenital malformations. Fetopathies.	
	TOTAL:	**45** hours

THEMATIC PLAN OF SEMINAR SESSIONS AND PRACTICAL CLASSES – WINTER SEMESTER

1.	Review of normal histology: brain, lung, myocardium, stomach, liver, kidney, spleen, lymph node, skin.	2 hours
2.	Acute reversible cellular injury: cellular swelling, excessive accumulation of carbohydrates and lipids.	2 hours
3.	Excessive accumulation of lipids. Accumulation of exogenous pigments.	2 hours
4.	Intracellular accumulations. Accumulation of endogenous pigments.	2 hours
5.	Damage to the extracellular matrix. Fibrinoid and hyaline changes.	2 hours
6.	Damage to the extracellular matrix. Accumulation of amyloid, calcium salts and sodium urates.	2 hours
7.	Cell death: apoptosis and necrosis.	2 hours
8.	Compensatory and adaptive processes: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia.	2 hours
9.	Seminar 1 – Degenerative processes, cell death, compensatory and adaptive processes.	2 hours
10.	Colloquium 1 – Degenerative processes, cell death, compensatory and adaptive processes.	2 hours
11.	Disorders of blood circulation: hyperaemia, ischaemia, oedema, haemorrhages.	2 hours
12.	Disorders of blood circulation: thrombosis, DIC syndrome, infarction.	2 hours
13.	Disorders of blood circulation: embolism, shock.	2 hours
14.	Seminar 2 – Disorders of blood circulation.	
15.	Colloquium 2 – Disorders of blood circulation.	2 hours
	TOTAL:	**30 hours**

THEMATIC PLAN OF SEMINAR SESSIONS AND PRACTICAL CLASSES – SUMMER SEMESTER

1.	Inflammation: main morphological changes. Classification.	2 hours
2.	Exudative inflammation.	2 hours
3.	Proliferative inflammation.	2 hours
4.	Granulomatous inflammation.	2 hours
5.	Regeneration and pathology of the immune system.	2 hours
6.	Seminar 1 – Inflammation and pathology of the immune system.	2 hours
7.	Colloquium 1 – Inflammation and pathology of the immune system.	2 hours
8.	Benign epithelial tumours.	2 hours
9.	Malignant epithelial tumours – Part I. Immunohistochemical diagnosis of tumours.	2 hours
10.	Malignant epithelial tumours – Part II.	2 hours
11.	Benign mesenchymal tumours.	2 hours
12.	Tumours of the nervous system.	2 hours
13.	Pigmented tumours. Teratomas.	2 hours
14.	Seminar 2 – Tumours.	
15.	Colloquium 2 – Tumours.	2 hours
	TOTAL:	**30 hours**

COURSE SYLLABUS
"GENERAL PATHOLOGY"
Degree Programme: Medicine
Educational Qualification Degree: Master

1. Subject, objectives and methods of pathology.
2. Death: clinical and biological. Signs of biological death.
3. Cellular injury: definition, categories of cellular injury, causative factors, pathogenetic and morphogenetic mechanisms.
4. Cellular injury: types of degeneration according to substrate, localisation and distribution. Acute reversible cellular injury (cellular swelling). Hydropic degeneration.
5. Excessive accumulation of substances within the cell: mechanisms. Excessive accumulation of proteins (hyaline droplet degeneration, Mallory bodies and Russell bodies) and carbohydrates. Methods of detection.
6. Disorders of lipid metabolism. Parenchymal and mesenchymal fatty degeneration. Accumulation of cholesterol and cholesterol esters. Methods of detection. General obesity. Lipomatosis. Cachexia.
7. Lysosomal storage diseases (thesaurismoses) – general characteristics.
8. Disorders of pigment metabolism. Classification. Accumulation of exogenous pigments.
9. Accumulation of iron-containing haemoglobinogenic pigments.
10. Accumulation of haemoglobinogenic pigments that do not contain iron. Jaundice.
11. Disorders of metabolism and accumulation of proteinogenic substances.
12. Excessive accumulation of substances in the extracellular matrix of connective tissue. Connective tissue degeneration – mucoid swelling. Fibrinoid degeneration.
13. Disorders of collagen and elastin synthesis.
14. Fibrosis: types, causes, mechanisms of development.
15. Hyalinosis: causes and types.
16. Amyloidoses: general physico-chemical characteristics, classification, main types according to composition, methods of detection.
17. Types of amyloidosis according to aetiology and extent of the process. Organ manifestations. Diagnosis.
18. Disorders of calcium and copper metabolism. Abnormal accumulation of uric acid salts.

19. Cell death. Necrobiosis. Necrosis: definition, types, nuclear and cytoplasmic morphological changes.
20. Clinico-anatomical forms of necrosis. Evolution and outcomes.
21. Apoptosis: definition, differences between apoptosis and necrosis. Role of apoptosis in pathology.
22. Disorders of blood circulation: general overview, local and systemic circulatory disorders. Changes in blood volume. Arterial hyperaemia.
23. Venous congestion. Acute and chronic left-sided heart failure – morphological changes.
24. Venous congestion. Acute and chronic right-sided heart failure – morphological changes.
25. Bleeding and haemorrhages. Plasma leakage. Terminology, mechanisms and outcomes.
26. Thrombosis: definition and morphogenesis. Structure of thrombi. Difference between a thrombus and a post-mortem clot.
27. Thrombosis: types of thrombi, complications and evolution.
28. Disseminated intravascular coagulation (DIC syndrome): morphological changes and pathogenetic mechanisms.
29. Types of embolism according to substrate. Comparison between embolism and metastasis.
30. Infarction: definition and types. Morphological characteristics of anaemic infarction.
31. Infarction: definition and types. Morphogenesis of haemorrhagic infarctions. Haemorrhagic infarction.
32. Shock: definition, pathogenetic types, morphological changes.
33. Disorders of lymphatic circulation: terminology and complications. Changes in tissue fluid volume. Oedema: definition and pathogenetic types. Pulmonary and cerebral oedema. Dehydration.
34. Inflammation: definition, terminology, main features. Aetiological factors from the external and internal environment.
35. Morphogenesis of acute (exudative) inflammation. Haemodynamic and permeability changes in the microcirculation. Leukocyte emigration and phagocytosis.
36. Cellular types in the focus of acute and chronic inflammation.
37. Exudative inflammation: types, morphology, complications and outcomes.
38. Productive inflammation: forms and morphological characteristics of diffuse productive inflammation.

39. Non-specific and "specific" granulomatous productive inflammation. Morphological changes.
40. Pathology of immunity. Hypersensitivity reactions of anaphylactoid and cytotoxic type (Type I and Type II).
41. Pathology of immunity. Hypersensitivity reactions of immune complex and delayed type (Type III and Type IV).
42. Pathology of immunity: types. Autoimmune diseases. Syndromes of congenital and acquired immunodeficiency.
43. Transplant immunology. Graft rejection reaction.
44. Compensatory processes: hypertrophy and hyperplasia. Morphological characteristics.
45. Atrophy and histological accommodation: definition, types, morphological characteristics.
46. Metaplasia: definition, types, morphological characteristics, complications.
47. Regeneration: restitution and substitution. Factors influencing reparative processes. Wound healing.
48. Regeneration of different tissues and organs.
49. Tumours: definition, incidence and distribution. Biology of tumour growth.
50. Tumours: terminology, classification, structure of tumours.
51. Aetiology of tumours. Chemical, physical, viral and genetic carcinogenesis. Role of growth factors.
52. Morphogenesis of tumours. Monocentric and multicentric theories of tumour origin. Biological basis of invasion of malignant tumours. Metastasis.
53. Morphological characteristics of tumours. Differences between benign and malignant tumours. Tissue and cellular atypia.
54. Precancerous conditions. Dysplasia. Carcinoma in situ.
55. Metastasis of tumours.
56. Degree of differentiation and staging in tumour development. TNM system.
57. Structure and shape of tumours – macroscopic and microscopic characteristics. Role of immunohistochemical markers in tumour diagnosis.
58. Molecular basis of tumour growth.
59. Benign tumours of epithelial origin.
60. Malignant tumours of epithelial origin.
61. Benign tumours of mesenchymal origin.
62. Malignant tumours of mesenchymal origin.

63. Tumours of the central nervous system – general characteristics, classification, main representatives.
64. Tumours of the cells of the nerve sheaths. Tumours of the meninges.
65. Tumours and tumour-like lesions of pigmented tissue. Teratogenic tumours.
66. Genopathies and fetopathies: types and morphological characteristics.
67. Embryopathies: types and morphological characteristics.
68. Fetopathies: types and morphological characteristics.

LITERATURE

1. ***Textbook of General Pathology, Vol. 1, edited by Prof. Grigor Velev, Znanie Publishing House Ltd., 1999.***
2. ***Fundamentals of Pathology, edited by Prof. Iv. Valkov, Sofia, Ciela Publishing House, 1998.***
3. ***Mohan, H. Textbook of Pathology, 6th Edition, 2010.***
4. ***Rubin's Pathology, 6th Edition, 2012, free eBook (download).***
5. ***Robbins Basic Pathology, 9th Edition, 2013, free eBook (download).***

Programme compiled by: ....

/Assoc. Prof. Nedyalka Zhgurova, MD, PhD/

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/Chief Assistant Prof. Ruska Nenkova, MD, PhD/

The curriculum for the course **"General Pathology"** for the degree programme **Medicine** was approved at a meeting of the Department of **Anatomy, Histology and Embryology, Pathology, Forensic Medicine and Deontology**, Minutes No. ..36.. dated..06.01.2026

Head of Department:
(Prof. Ivaylo Stefanov, DVM, PhD)

The curriculum was approved and discussed at a meeting of the **Faculty Council of the Faculty of Medicine**, Minutes No. 38. dated ..09.01.2026.

Scientific Secretary of the Faculty Council: .....
(Chief Assistant Prof. Ruska Nenkova, MD, PhD)

BURGAS STATE UNIVERSITY

"PROF. DR. ASEN ZLATAROV" - BURGAS

FACULTY OF MEDICINE

DEPARTMENT OF PHYSIOLOGY, PATHOPHYSIOLOGY, MEDICAL GENETICS, PARASITOLOGY, CLINICAL LABORATORY AND IMMUNOLOGY"

APPROVED by !

DEAN:

/Prof. Dr. Rumyana Yankova/

SYLLABUS

School discipline:	MEDICAL GENETICS
Specialty:	MEDICINE
Professional field	7.1 MEDICINE
Educational and qualification degree:	MASTER
Form of training:	REGULAR

Burgas 2025

EXTRACTS FROM THE CURRICULUM

1. GENERAL PARAMETERS OF THE DISCIPLINE			
Total (academic hours)	90	**ECTS:**	3
Auditorium classes	**Non-auditorium classes**	**Auditorium ECTS**	**Non-auditorium ECTS**
60	30	2	1
Type of Discipline:	**Number of hours per week: /lectures + exercises/**	*Course:*	*Semester:*
Mandatory	2+2	***III***	***V***

2. STUDY FORMS					
Auditorium classes:	**Hours**	**ECTS**	**Non-auditorium classes:**	**Hours**	**ECTS**
Lectures	30	1	**Consultations** (work with a teacher)	6	0,2
Practical Classes	30	1	**Independent work:** - Preparation of an abstract; - Preparation of exercises.	12 12	0,4 0.4

3. EVALUATION AND CONTROL	
Forms of evaluation and control	**Relative share in the overall assessment**
Sessional Evaluation: Abstract	0.4
Semester (ongoing) assessment:	0.6
Forms of Semester control:	
- Presence of Classes	0.25
- Active participation in the classes - discussions and practical tasks	0.25
- Protocol protection	0.25
- Ongoing questioning before each exercise	0.25

ANNOTATION

on Discipline

"MEDICAL GENETICS"

Purpose of the discipline

Medical Genetics is one of the fastest growing areas in the medical field. Its achievements are important for clinical practice in various fields – Pediatrics, Hematology, Oncology, Neurology, Nephrology, Ophthalmology, endocrinology, cardiology, obstetrics and gynecology, therapy. In the basic course of medical genetics, the mandatory minimum of fundamental and propaedeutic knowledge about the biological nature of hereditary diseases, the peculiarities of their inheritance, etiopathogenetic classification of hereditary diseases and predispositions, as well as the role of environmental factors for the occurrence of germinative and somatic mutations in humans. The main diagnostic and prophylactic approaches in the group of chromosomal diseases and malformations, monogenic and polygenic diseases and hereditary Predispositions. The principles, organization and tasks of the medico-genetic consultation and its relationship with the problems of clinical-genetic polymorphism, approaches and indications for prenatal diagnosis, the organization of and the essence of mass and selective genetic screening and monitoring, such as active form of medico-genetic consultation and prevention of hereditary pathology. For the first time, genetic mechanisms are included in the curriculum for the occurrence of hereditary malignancies, mitochondrial diseases, as well as diseases determined by dynamic mutations. The modernisation of the The program is also related to preimplantation and preconception diagnostics, as well as some novelties in the treatment of genetic diseases - conventional and gene therapy. The program is consistent with the training in fundamental human genetics, which students receive in the biology course by creates basic propaedeutic training on the most frequent and significant hereditary pathology that students will encounter in clinical disciplines. Peculiarity of teaching medical genetics in the Faculty of Medicine of the University "Prof. Dr. Asen Zlatarov" – Burgas is an additional theoretical and practical study dysmorphology, which is characteristic of almost all hereditary diseases, as well as the creation of skills on the part of students to properly differentiate patients and their relatives who need medical-genetic counseling. Through modernization of the educational process in medical genetics is expected doctors to be actively involved in the prevention of hereditary diseases and predispositions by competently directing citizens in need to genetic counselling and assist in the implementation of screening programmes.

Learning of medical genetics is a continuous process that must continue after university education in order to be at European level in the Training.

Main tasks of the school program:

- Acquaintance and acquisition of knowledge about the basics of medical genetics; understanding of the genetic nature of hereditary diseases, hereditary predispositions to diseases due to of somatic mutations.
- Introduction to modern diagnostic methods of medical genetics and algorithm of behaviour.
- Acquisition of skills for active participation in the prevention of hereditary diseases and through competent referral of patients to genetic consultations, assistance in

conducting screening programs, assessment of indications for DNA diagnostics, cytogenetic analysis, prenatal, pre-implantation and postnatal genetic diagnosis.

Expected results:

The expected results of theoretical and practical skills, that students must master when passing the course of study in medical genetics are in the following areas:

- theoretically mastering the basic methods of genetic analysis: genealogical method, ontogenetic method, population-genetic method, cytogenetic method, molecular genetic and molecular-cytogenetic methods;
- Practical application of the indications for genetic testing, prenatal genetic monitoring and screening and short-term tests for mutagenicity - reporting of chromosomal aberrations /HA/, sister chromatid exchanges /WHO/ and micronuclei in binuclear cells;
- skills for construction and genetic analysis of a family tree; determination of genetic risk and genetic prognosis for the next generation; recognition of human chromosomes by groups and their arrangement into a karyotype; karyotype analysis, designation and reading of cytogenetic diagnosis; the use of express methods for cytogenetic analysis - by taking into account X and Y sex chromatin; Preparation of the necessary health documentation to refer patients for medico-genetic counseling and genetic testing.
- How congenital and acquired genetic alterations can lead to the development of malignant tumors and how to identify these can be used for diagnosis, prognosis and prevention of malignant diseases;
- Know the indications, main tasks and the organization of the medical-genetic consultation;
- Use clinical information for searching for various hereditary diseases in the national and international databases
- How the genotype of the patient can be used to development of more effective approaches to maintaining health, for the diagnosis of the disease and individual treatment of each patient;
- Work with medical geneticists in multidisciplinary teams to build a plan for diagnosis and therapy of a genetic disease, and behavior towards the patient.

Methods of teaching: The technology of teaching includes traditional and innovative teaching methods - lectures, talks, discussions, presentations, film screenings, seminars, teamwork and consultations. Along during the exercise, students actively participate, with each member of the group presents, discusses and answers questions on various medico-genetic cases. Clinical thinking and rational choice of indicators for the purpose of correct diagnosis and adequate medical decision.

Forms of Independent work: coursework from abstract type, problems for self-solving on topics from the practical classes, solving tests, colloquia.

Forms of assessment of knowledge: assessment of students' knowledge, a combination of modern and classical methods.

Current control:

- Oral examination before conducting the the practical lesson;

- Solving didactic tests on medical genetics;
- Seminars – discussions;
- Evaluation and certification of the protocols at the end of the exercise;
- Colloquium with test part and oral interrogation.

Semester Exam:

- Practical exam;
- Test;
- Theoretical exam with a written part.

CONTENT OF THE CURRICULUM

LECTURES

№	Theme	Hours
1.	Purpose, subject and tasks of medical genetics. Genomics, Proteomics, Metabolomics, Pharmacogenomics. Organization of the human genome. Structure and function of Chromosomes. Chromosomal heteromorphism.	2
2.	Etiology of genetic diseases. Classification of genetic diseases. Mutations in nuclear DNA. Defects in DNA repair. Mutations in mitochondrial DNA. Chromosomal mutations. Pathogenesis of monogenic diseases. DNA mutations that occur affect the structure and function of enzymes, the activity of receptor proteins, collagen structure, spectrin, dystrophin, gene activity involved in tumorigenesis.	2
3.	Diagnostic methods in the medical field genetics. Clinical and genealogical method. Molecular genetic methods. Cytogenetic and molecular-cytogenetic methods.	2
4.	Chromosomal diseases - etiology, pathogenesis, clinic, cytogenetic diagnosis and genetic risk. HD at structural or numerical aberrations of sex chromosomes and autosomes.	2
5.	Monogenic diseases (MB) that are due to the classic type mutations in nuclear DNA. Congenital errors of metabolism (IG). Congenital errors of the human Hemoglobin.	2
6.	MB defined by dynamic mutations. Mitochondrial diseases.	2
7.	Congenital defects of the connective tissue. Hereditary neuromuscular diseases.	2
8.	Hereditary immunodeficiencies Conditions. Diseases associated with a	2

	violation of DNA repair.	
9.	Pharmacogenetics and pharmacogenomics. Definition, genetic nature, classification and diagnosis of pharmacogenetic Disorders. Importance of pharmacogenetic defects for the determination of individual drug dose and for the prevention of adverse drug Reactions.	2
10.	Polygenic diseases. Genetic aspects of some mental, cardiovascular, gastrointestinal and other Diseases.	2
11.	Congenital malformations. Genetic aspects of mental disability.	2
12.	Genetic aspects of malignant diseases. Diseases associated with somatic mutations.	2
13.	Prevention of hereditary Diseases. Medical genetic consultation (MGC) - essence, indications and tasks. Prenatal diagnosis. Preimplantation and preconception diagnostics. Genetic screening. Selective genetic screening. Active screening programs in Bulgaria.	2
14.	Therapy of genetic diseases. Gene therapy of monogenic diseases. Antisense therapy of diseases related to with somatic mutations and viral infections. Therapy of oncological diseases by stimulating the immune system system. Insertion of genes into tumor cells to create sensitivity to medicines.	2 hours
15.	Ethical, Legal and Social Issues of Medical Genetics	2
Total		**30 hours**

SEMINAR EXERCISES

№	Theme	Hours
1.	**Basic methods for genetic analysis of monogenic diseases**. Genealogical method.	2
2.	**Genealogical analysis to determine the type** Main criteria and differential diagnosis of types of inheritance. Deviations from the classical type of inheritance – gonaden mosaicism, dynamic mutations, genomic imprinting, uniparental dysoma, mitochondrial inheritance. Building pedigrees and determining the type of Inheritance.	2
3.	**Etiology, pathogenesis, clinic, genetic diagnosis and prevention of monogenic diseases**. –genetic methods. Isolation of nucleic acids from biological material. Treatment of peripheral blood with a commercial kit to obtain high molecular weight human DNA. DNA testing to determine the quality of Sample. Methods for detecting known mutations in DNA. Amplification – restriction. Conducting polymerase chain reaction (PCR). Methods for detecting unknown mutations in DNA. DNA sequencing. Monogenic diseases with autosomal dominant type of inheritance - familial	2

	hypercholesterolemia, Marfan syndrome, osteogenesis imperfecta, adult dominant polycystic renal disease. Monogenic diseases of autosomal recessive type inheritance - phenylketonuria; galactosemia; cystic fibrosis; thalassemia and abnormal hemoglobins.	
4.	**Monogenic diseases with X dominant type of inheritance** - hypophosphatemic vitamin D, resistant rickets. Monogenic diseases with X recessive type of inheritance - hemophilia A and B, progressive muscular dystrophy Duchenne type and Becker type. **I colloquium**	2
5.	**Basic approaches to building a genetic diagnosis and prognosis of chromosomal diseases.** Cytogenetic diagnosis. Cytogenetic methods. Principles of cellular cutibilation. Treatment of lymphocyte cultures to obtain metaphase Chromosomes. Application of strip techniques for differential staining of Chromosomes. GTG – tape technique: controlled trypsinization of chromosomal preparations and staining with Giemsa paint. Molecular-cytogenetic Methods. Fluorescence in situ hybridization (FISH) Microscopic analysis of the obtained Preparations. Deviations from the normal human karyotype: diagnosis of chromosomal aberrations, determination of genetic risk.	2
6.	**Chromosomal diseases - etiology, pathogenesis, clinic, cytogenetic diagnosis and prevention**. Chromosomal diseases associated with aberrations of sex chromosomes.	2
7.	**Chromosomal diseases associated with aberrations of autosomes**. Carotyping of metaphase plates using software. International System of Human Cytogenetic Nomenclature (ISCN). Diagnosis of pathological karyotypes. **II colloquium**	2
8.	**Pharmacogenetic defects (FGD)** - etiology, pathogenesis, clinical prevention of adverse drug reactions when carrying FGD. Glucose-6-phosphate dehydrogenase deficiency. Genetic polymorphism of hepatic cytochrome P 450 monooxy-genases.	2
9.	**Congenital malformations - monogenic, polygenic and teratogenic.** Genetics of the mental insufficiency. Basic diagnostic approaches.	2
10.	**Basic approaches to building a genetic diagnosis and prognosis of polygenic diseases** - neural tube defects, cleft lips and palate, ischemic disease of the heart, insulin-dependent diabetes mellitus, Alzheimer's disease.	2
11.	**Basic approaches to building a Genetic diagnosis and prognosis of diseases associated with somatic mutations**: leukemia and lymphoma; breast cancer; colon cancer in the family adenomatous disease and familial	2

	non-polyposis colorectal carcinoma; Sporadic colorectal carcinoma.	
12.	**Medico-genetic consultation (MGC)** of monogenic, polygenic and chromosomal diseases. Informed consent, the right to information choice, and confidentiality when working with genetic information. Moral, ethical and legal problems of genetic research. Discussion of clinical cases	2
13.	**Prenatal diagnosis.**Indications for prenatal diagnosis of monogenic and chromosomal diseases. Genetic screening programs.	2
14.	**Genetic screening programs.**	2
15.	**Hereditary predisposition to diseases subject to various clinical specialties:** disorders in reproduction, neurological and psychiatric diseases, diseases of the visual and auditory analyzer, internal diseases, skin and malignant diseases blood diseases and immunodeficiency diseases Conditions. **Test on the whole material**	
Total		**30**

SYNOPSIS
for an exam in "MEDICAL GENETICS"
for students majoring in "MEDICINE"

1. The place of genetics and genomics in medicine.
2. Organization of the human genome. Structure and function of Genes. Multigenic families. Non-functional DNA sequences Polymorphism.
3. Regulation of gene activity – level control Transcription.
4. Regulation of gene activity – post-transcriptional control.
5. Regulation of gene activity – control at the level translation.
6. Epigenetics – biological and molecular-genetic Aspect.
7. Organization of the mitochondrial genome.
8. Microscopic and submicroscopic structure and function of Chromosomes. Mitochondrial chromosomes.
9. Normal human karyotype. Chromosomal heteromorphism – types and meaning.
10. Mutagenesis. Classification of gene mutations.
11. Gene mutations according to phenotypic expression – with loss of function, with the acquisition of function, dominant-negative mutations.
12. Molecular mechanisms for DNA repair.
13. Chromosomal mutations. Numerical chromosomal aberrations – aneuploidies, mosaicism, polyploidy.
14. Structural chromosomal aberrations – intrachromosomal and interchromosomal rearrangements. Marker chromosomes. Chromosomal fragility and instability.
15. Clinical-genealogical method.
16. Autosomal dominant type of inheritance. Clinical and genealogical criteria. Features and deviations from the classical AD type of Inheritance. Diseases.

17. Autosomal recessive type of inheritance. Clinical and genealogical criteria. Features of AR inheritance type. Diseases.
18. Sex-Related Inheritance - X Recessive and X dominant type of inheritance. Clinical and genealogical criteria. Features of Inheritance. Diseases.
19. Non-traditional (non-Mendeling) inheritance – gonaden and somatic mosaicism, genomic imprinting and uniparental dysoma, inheritance of dynamic mutations, mitochondrial inheritance.
20. Inheritance of chromosomal aberrations
21. Laboratory methods for the diagnosis of monogenic diseases – DNA diagnostics of unknown gene mutations.
22. Laboratory methods for the diagnosis of monogenic diseases – DNA diagnostics of known gene mutations.
23. Microarray methods for expression analysis.
24. Genetic methods for postnatal diagnosis of chromosomal diseases.
25. Monogenic diseases – hemolytic anemias.
26. Congenital metabolic diseases – diseases with disorders of amino acid metabolism.
27. Congenital metabolic diseases – diseases with disorders of carbohydrate metabolism.
28. Diseases with disorders in lipoprotein metabolism.
29. Lysosomal diseases - mucopolysaccharidoses, sphingolipidosis, mucolipidoses.
30. Hereditary connective tissue diseases and skeletal system.
31. Congenital immunodeficiency diseases.
32. Hereditary neuromuscular diseases - muscular Dystrophy.
33. Monogenic diseases with pulmonary manifestations - cystic fibrosis, alpha-1-antitrypsin deficiency.
34. Hereditary non-syndromic deafness.
35. Hereditary syndromic deafness.
36. Hereditary diseases in dynamic mutations.
37. Mitochondrial diseases.
38. Chromosomal diseases – general characteristics and diagnostics.
39. Chromosomal diseases due to mutations in sex Chromosomes.
40. Chromosomal diseases due to numerical and structural aberrations of autosomes.
41. Syndromes in defects of neighboring genes – syndrome of Prader-Willi, Angelman syndrome, DiGiorgi syndrome.
42. General characteristics of multifactorial diseases.
43. Genetic polymorphism in multifactorial diseases.
44. Genetic predisposition to cardiovascular diseases – coronary artery disease of arterial hypertension.
45. Genetic predisposition to gastrointestinal monogenic diseases – familial adenomatous polyposis and hereditary non-polyposis colon cancer; juvenile polyposis syndrome; syndrome of Peutz-Jeghers; Cowden's syndrome.
46. Genetic factors in endocrine diseases.
47. Genetics of some mental illnesses – schizophrenia and affective disorders.
48. Genetics of some mental illnesses – disease of Alzheimer
49. Genetic predisposition to lung diseases – bronchial asthma, chronic obstructive pulmonary disease.
50. Genetic determination of overweight.
51. Cancer Genetics – General characteristic.
52. General genetic characteristics of hereditary cancer syndromes – polyposis and non-polyposis colorectal carcinoma, breast and ovarian cancer, familial melanoma, multiple endocrine neoplasia.

53. Dysmorphology and teratogenesis.
54. Developmental abnormalities under teratogenic influences.
55. Mental retardation.
56. Genetic causes of infertility.
57. Prenatal diagnosis of monogenic and chromosomal diseases – indications, invasive and non-invasive approaches.
58. Screening programs – general provisions, mass screening in newborns and pregnant women.
59. Selective screening for the detection of heterozygous carriage of recessive mutations.
60. Medical and genetic consultation.
61. Pharmacogenetics.
62. Pharmacogenomics.
63. Biology of targeted therapy.
64. Targeted therapy for cancer of: mammary gland, lung liver, column and chronic myelogenous leukemia.
65. Genetic aspects of predictive medicine.

LITERATURE FOR PREPARATION

Main:

1. Medical Genetics and Genomics. Edited by Corr. Prof. Draga Toncheva and Prof. Savina Hadzhidekova. ARSO Medical Publishing House, Sofia Aug. 2020 ISBN: 978-197-057-5

2. Genomic Medicine Part I and II. Edited by Prof. D. Prof. Toncheva and Prof. V. Ganev ed. Simmelpres, 2015. ISBN: 978-619-183-015-2

3. Medical Genetics Practical Guide for Students Medics. Edited by Corresponding Member, Prof. D. Toncheva and Prof. Dr. Savina Hadzhidekova. Ed. ARSO, Sofia, 2020, ISBN: 978-619-197-052-0

4. Color atlas of Geneticsq 4th ed., E. Passarage. ISBN: 978-313-100-364

Additional:

1. Valkanova, M. Legal Aspects of Genetic Research. Legal Thought, 2008, No 2, 101-116.

2. B. Popov. Basic principles and approaches of medical genetic prophylaxis. Textbook for general practitioners. KOTA Publishing House Stara Zagora, 2018, ISBN 978-954-305-462-6

3. B. Popov. ***Didactic tests on medical genetics***. Textbook for students. KOTA Publishing House, Stara Zagora, 2012 ISBN 978-954-305-343-8.

4. Kovacheva K., (2016). Congenital anomalies: clinical-dysmorphological and genetic Problems. IC MU - Pleven Publishing House ISBN: 978-956-756-189-2

5. Delivery M., (2013). Genetic Discrimination. Sibi Publishing House ISBN: 978-954-730-852-7

6. Dimitrova I., (2012). Prenatal Diagnostics and Biopolitics in Bulgaria. East-West Publishing House ISBN: 978-954-321-125-8

7. Dagan P., (2010). Congenital Anomalies in Clinical Practice. "Medicine and Physical Education", Sofia ISBN: 978-954-420-280-4

Compiled by:.....

(Assoc. Prof. Dr. Borislav Popov, MD)

The curriculum was also discussed at the meeting of the Department of Physiology, Pathophysiology, Medical Genetics, Parasitology, Clinical Laboratory and immunology", protocol No. ..... of ..09.04.25

Head of Department: .....

(Prof. Petya Tsvetkoova, DSc)

The curriculum was adopted and discussed at the Faculty Council, Protocol No. 23. from.....16.04.2025г.

Scientific Secretary of the FS: ..

(Chief Assistant Dr. Ruska Nenkova)