

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

Approved by!

DEAN:

(Prof. Romyana Yankova, PhD)

CURRICULUM

Academic discipline:	PROPAEDEUTICS OF INTERNAL DISEASES
Specialty:	MEDICINE
Field of higher education:	7.1. MEDICINE
Educational and qualification degree:	MASTER
Form of education:	Full-time

Burgas, 2025

1. GENERAL PARAMETERS OF THE DISCIPLINE					
Total (academic hours)::		360	ECTS:		12
Auditorium classes	Non-auditorium classes		Auditorium ECTS	Non-auditorium ECTS	
240	120		8.0	4.0	
Type of subject:	Number of hours per week: (lectures + practicals)		Course:	Semester:	
Mandatory	2+2/6+6		III	V and VI	
2. STUDY FORMS					
Auditorium classes:	Academic hours	ECTS	Non-auditorium classes:		Academic hours ECTS
Lectures	60	2.0	Consultations		60 2.0
			Work with a teacher		
			Self- study work		
Practical sessions	180	6.0	- preparing an abstract/report - preparation of exercises;		40 1.3 20 0.7
3. ASSESSMENT AND CONTROL					
Assessment and Control Forms				Relative share in the total score	
Session Assessment: Exam				0.4	
Semester (Ongoing) Assessment:				0.6	
Forms of semester control:					
- Attendance of classes (practical exercises)				0.25	
- Active participation in Educational/Scientific activities				0.25	
- Ongoing control (colloquium, tests)				0.5	

ANNOTATION

The academic discipline "Propaedeutics of Internal Diseases" is mandatory for students of the specialty "Medicine", third year, full-time form of education.

Purpose of the Discipline:

The discipline "Propaedeutics of Internal Diseases" is fundamental in the curriculum of the medical education. It provides knowledge about patient examination methods – anamnesis, physical examination, instrumental, and laboratory tests; the approach and logic in formulating a diagnosis and the methodology of the diagnostic process; symptomatology and syndromology of internal diseases; clinical presentation; fundamental principles of treatment, complications, and prognosis.

Aim and objectives:

The aim of the training in the discipline "Propaedeutics of Internal Diseases" is for students to acquire basic theoretical knowledge and practical skills that form the basic for diagnostics and clinical thinking in the field of internal medicine. By mastering the methods of collecting anamnesis, performing a physical examination and recognizing basic symptoms and syndromes, students prepare themselves for independent work with a patient and for their subsequent training in clinical disciplines.

The training also aims to develop professional communication, ethical behaviour, and proper medical record keeping, which are essential key components of medical practice.

Main Tasks of the Curriculum:

- Mastering methods for clinical examination and establishing a clinical diagnosis in internal diseases.
- Learning methods for collecting anamnesis: Developing skills for effective and targeted patient interviews. Taking into account subjective complaints in the context of general condition and medical history. Conducting an independent complete physical examination of patients. Recognition of normal and pathological findings.
- Understanding the clinical presentation, history taking, physical status, instrumental and laboratory tests for internal diseases.
- Creating diagnostic plans (algorithms), making diagnoses and forming a prognosis for diseases.

Expected learning outcomes:

Upon completion of the discipline "Propaedeutics of Internal Diseases", students should have the following theoretical knowledge:

- Taking medical history record and performing all physical examination methods.
- Methods for physical and instrumental examination of the respiratory system and related diseases.
- Medical history and physical examination of the cardiovascular system; normal ECG, rhythm and conduction disorders, echocardiography, arterial and venous assessment, and peripheral pulse.
- Diseases of the cardiovascular system, gastrointestinal tract, kidneys, blood, endocrine and metabolic systems.
- Physical examination of the kidneys, thyroid gland, instrumental and physical examination of the gastrointestinal system.
- Diagnosis and examination of patients with joint diseases – rheumatoid arthritis, arthrosis, and systemic connective tissue diseases.

- Knowledge of both classical and modern diagnostic methods in internal medicine.

Practical skills:

- independent history taking in patients;
- mastering the physical methods of examining the patient (inspection, palpation, percussion, auscultation)
- physical examination of the lungs;
- physical examination of the heart and peripheral pulse;
- physical examination of the abdomen and abdominal organs;
- physical examination of a patient with endocrine diseases;
- physical examination of a patient with bone and joint diseases;
- independent reading of normal and pathological ECG;
- analysis of deviations in laboratory results in internal diseases;

Teaching methods

- Traditional (passive) methods: presentation of the study material through a lecture, demonstration, and good clinical practices.
- Modern (interactive) methods: discussion, problem-based learning, consistent work in small groups throughout the semester and the academic year.
- Digital technologies: online education and multimedia tools (audio and video materials) with the aim of deeper understanding of the specific material.

Forms of self-study: abstract-type coursework, tasks for independent solution on topics from practical classes, solving tests assignments, colloquiums.

Assessment methods

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

Current control:

- Oral examination before the practical session
- Tests
- Seminar sessions - discussions
- Evaluation and certification of the protocols at the end of the exercise
- Colloquium with a test part and oral examination

Semester exam:

- Test
- Practical exam
- Theoretical exam with a written part, stored in the department's archives, and an oral part before a committee of habilitated lecturers.

The assessment of the students' achievements in their training is achieved through ongoing control - 3 tests and 6 colloquiums per year. The final semester exam in propaedeutics of internal medicine is conducted in 3 phases: test, practical exam and oral theoretical exam.

CURRICULUM CONTENT

LECTURES

Topic	hours
1. History and present status. Objective examination methods.	2
2. Main symptoms and syndromes in diseases of the respiratory system.	2
3. Acute and chronic bronchitis. Pulmonary emphysema. COPD.	2
4. Bronchial asthma.	2
5. Pneumonia, abscesses, bronchiectasis.	2
6. Pulmonary tuberculosis.	2
7. Pulmonary thromboembolism.	2
8. Lung cancer.	2
9. Main symptoms and syndromes and methods of examination in diseases of the cardiovascular system.	2
10. Acquired valvular diseases - part I.	2
11. Acquired valvular diseases - part II.	2
12. Arterial hypertension.	2
13. Ischemic heart disease- stable angina.	2
14. Acute coronary syndrome - unstable angina, myocardial infarction.	2
15. Heart failure.	2
16. Physical examination of the abdomen - inspection, palpation, percussion, auscultation. The most important clinical-chemical, immunological and instrumental methods for examining the esophagus, stomach and intestines.	2
17. Symptoms and syndromes in diseases of the esophagus, stomach and intestines.	2
18. Main diseases of the esophagus, stomach, small and large intestines.	2
19. Symptoms and syndromes of diseases of the liver, biliary system and pancreas	2
20. Physical examination of the liver, biliary system and pancreas.	2
21. Chronic hepatitis, liver cirrhosis, cholelithiasis, acute and chronic pancreatitis.	2
22. Main symptoms and syndromes and methods of examination of the urinary system.	2
23. Main diseases of the kidneys and urinary tract.	2
24. Anemias - physical and laboratory methods of examination.	2
25. Leukemias and myeloproliferative diseases - physical, laboratory and instrumental methods of examination.	2
26. Lymphomas, blood clotting disorders.	2
27. Endocrine system. Diseases of the pituitary gland and adrenal glands.	2
28. Endocrine system. Diseases of the thyroid gland.	2
29. Diabetes mellitus.	2
30. Diseases of the musculoskeletal system.	2
Total:	60

PRACTICAL LESSIONS

Topic	hours
1. Anamnesis/ case history	3
2. General status. Head and neck status.	3
3. Physical examination of the lungs.	3
4. Physical examination of the cardiovascular system.	3
5. Physical examination of the cardiovascular system.	3
6. Physical examination of the urinary system, endocrine glands and patients with hematological diseases.	3
7. Colloquium on the study of the lung and cardiovascular system.	3
8. Colloquium on the study of the abdomen, urinary system, endocrine glands and patients with hematological diseases.	3
9. COPD. Chronic bronchitis and emphysema.	3
10. Bronchial asthma.	3
11. Types of pneumonia.	3
12. Pleurisy.	3
13. Lung cancer.	3
14. Pulmonary thromboembolism.	3
15. Tuberculosis.	3
16. Lung abscess.	3
17. Acute and chronic heart failure.	3
18. Ischemic heart disease. Angina pectoris. Ischemic cardiomyopathy.	3
19. Ischemic heart disease. Acute coronary syndrome.	3
20. Arterial hypertension.	3
21. Endocarditis.	3
22. Myocarditis.	3
23. Pericarditis.	3
24. Acquired mitral defects.	3
25. Acquired aortic defects.	3
26. ECG norm and pathological changes.	3
27. Clinical laboratory.	3
28. Clinical laboratory.	3
29. Clinical laboratory.	3

30. Clinical laboratory	3
31. Diseases of the esophagus.	3
32. Chronic gastritis. Peptic ulcer disease.	3
33. Gastric carcinoma.	3
34. Diseases of the small intestine.	3
35. Diseases of the large intestine.	3
36. Chronic hepatitis.	3
37. Liver cirrhosis.	3
38. Liver cirrhosis.	3
39. Cholelithiasis. Cholecystitis.	3
40. Pancreatitis - acute and chronic.	3
41. Glomerulonephritis - acute and chronic.	3
42. Pyelonephritis - acute and chronic. Nephrolithiasis.	3
43. Kidney tumors. Kidney involvement in systemic diseases.	3
44. Anemias - types.	3
45. Myeloproliferative, myelodysplastic diseases.	3
46. Lymphomas.	3
47. Blood clotting. Hemorrhagic diatheses.	3
48. Pituitary gland diseases.	3
49. Thyroid and parathyroid gland diseases.	3
50. Adrenal gland diseases.	3
51. Diabetes mellitus. Hyperlipoproteinemias.	3
52. Collagenoses.	3
53. Rheumatoid arthritis.	3
54. Review.	3
55. Review.	3
56. Clinical laboratory.	3
57. Clinical laboratory.	3
58. Clinical laboratory	3
59. Clinical laboratory	3
60. Clinical laboratory	3
Total:	180

EXAM SCHEDULE
for the exam in "PROPAEDEUTICS OF INTERNAL DISEASES"
for students of the specialty "Medicine"

Part I - practical exam

Clinical methods for examining the patient

1. Anamnesis - rules for taking the anamnesis, parts of the anamnesis.
2. Physical examination methods - examination, palpation, percussion, auscultation.
3. Current condition /status present/ - plan.
4. General condition of the patient - general examination, mental state, body position, posture and gait, height and build, bone and muscular system, security, body mass. Changes in the skin, skin appendages and mucous membranes. Body temperature, types of temperature curves and their clinical significance.
5. Examination of the head and neck, lymph nodes - pathological changes, diagnostic value.
6. Clinical methods for examining a pulmonary patient - history, physical examination - pathological changes, diagnostic value.
7. Clinical methods for examining the cardiovascular system - history, physical examination, pathological changes, diagnostic value.
8. Examination of arteries and veins - diagnostic value of pathological changes.
9. Clinical methods for examining the urinary system - history, physical examination, pathological changes, diagnostic value.
10. Physical methods for examining the abdomen - pathological abnormalities, diagnostic value.
11. Clinical methods for examining the gastrointestinal tract - history, physical examination, pathological abnormalities, diagnostic value.
12. Clinical methods for examining a liver patient - history, physical examination, pathological abnormalities, diagnostic value.
13. Clinical methods for examining patients with diseases of the gallbladder and bile ducts - pathological abnormalities, diagnostic value.
14. Clinical methods for examining the pancreas - history, physical examination, pathological abnormalities, diagnostic value.
15. Physical examination of the spleen. Splenomegaly - the most common diseases.
16. Examination of patients with diseases of the thyroid gland and adrenal glands - history, physical and laboratory examinations.
17. Examination of patients with diseases of the musculoskeletal system: history, physical and laboratory examinations, pathological abnormalities, diagnostic value.

Part II - laboratory, functional and instrumental methods of examination

18. Functional examination of the respiratory system. Methods of examination of the respiratory system - radiography, bronchoscopy. Respiratory failure - etiology, pathogenesis, clinical picture.
19. Pleural puncture, examination of punctates.
20. Electrocardiography - pathological changes in heart rhythm disorders, cardiac conduction, changes in IHD - angina, myocardial infarction.
21. Functional and instrumental methods for examining the heart - bicycle ergometry, echocardiography, radioisotope examination, catheterization, angiocardiology - diagnostic possibilities.
22. Functional examination of the kidneys - concentration and dilution tests, clearance studies, radioisotope studies - diagnostic value.
23. Instrumental methods for examining the digestive system - fibrogastroscopy, fibrocolonoscopy, rectoscopy - diagnostic value.
24. Laboratory tests in liver diseases - diagnostic value.
25. Abdominal ultrasound, liver biopsy, CAT and MRI - diagnostic options.
26. Functional examination of the endocrine system.
27. Functional examination of the musculoskeletal system.

Part III – basic internal diseases

28. Acute respiratory diseases. Acute tracheobronchitis, acute bronchitis - etiology, pathogenesis, pathomorphology, clinical picture, treatment and diagnostic plan, diagnosis.
29. COPD - etiology, pathogenesis, clinical forms, pathomorphology, clinical picture, treatment and diagnostic plan, diagnosis.
30. Bronchiectasis - etiology, pathogenesis, pathomorphology, clinical picture, treatment and diagnostic plan, diagnosis.
31. Bronchial asthma - etiology, pathogenesis, pathomorphology, clinical picture, clinical forms, treatment and diagnostic plan, diagnosis.
32. Pneumonia - croupous pneumonia.
33. Pneumonia - bronchopneumonia.
34. Pneumonias - interstitial pneumonias.
35. Pulmonary thromboembolism - etiology, pathogenesis, pathomorphology, clinical picture, clinical forms, treatment and diagnostic plan, diagnosis.
36. Lung cancer - classification, etiology, pathogenesis, pathomorphology, clinical picture, treatment and diagnostic plan, diagnosis.
37. Pleurisy - classification, etiology, pathogenesis, pathomorphology, clinical picture, treatment and diagnostic plan, diagnosis.
38. Pulmonary tuberculosis - primary forms, classification, etiology, pathogenesis, pathomorphology, clinical picture, treatment and diagnostic plan, diagnosis.

39. Pulmonary tuberculosis - secondary forms, classification, etiology, pathogenesis, pathomorphology, clinical picture, treatment and diagnostic plan, diagnosis.
40. Heart failure - definition, classification, pathophysiology, types - left-sided, right-sided heart failure, clinical picture, treatment and diagnostic plan, diagnosis.
41. Cardiogenic shock - etiology, pathogenesis, hemodynamic disorders, clinical picture.
42. Endocardial diseases - acute endocarditis.
43. Endocardial diseases - subacute endocarditis.
44. Myocarditis.
45. Mycardiopathies.
46. Pericarditis - acute and chronic - etiology, pathogenesis, pathomorphology, clinical picture, treatment and diagnostic plan, diagnosis.
47. Rheumatism - etiology, pathogenesis, pathomorphology, clinical picture, clinical forms, treatment and diagnostic plan, diagnosis.
48. Mitral regurgitation - etiology, pathophysiology, clinical picture, treatment-diagnostic plan, diagnosis.
49. Mitral stenosis - etiology, pathophysiology, clinical picture, treatment-diagnostic plan, diagnosis.
50. Aortic regurgitation - etiology, pathophysiology, clinical picture, treatment-diagnostic plan, diagnosis.
51. Aortic stenosis - etiology, pathophysiology, clinical picture, treatment and diagnostic plan, diagnosis.
52. Hypertensive disease - etiology, pathogenesis, clinical picture, complications, treatment and diagnostic plan, diagnosis.
53. Ischemic heart disease. Stable and unstable angina - etiology, pathogenesis, clinical picture, forms, diagnosis.
54. Ischemic heart disease - myocardial infarction - etiology, pathogenesis, pathomorphology, forms, clinical picture.
55. Acute renal failure - etiology, pathogenesis, clinical picture.
56. Chronic renal failure - etiology, pathogenesis, clinical picture.
57. Acute diffuse glomerulonephritis - etiology, pathogenesis, pathomorphology, clinical picture, diagnosis.
58. Chronic glomerulonephritis - classification, etiology, pathogenesis pathomorphology, forms, clinical picture.
59. Nephrolithiasis.
60. Renal crisis.
61. Acute and chronic pyelonephritis - etiology, pathogenesis, pathomorphology, clinical picture, diagnosis.
62. Gastroesophageal reflux disease /GERD/. Reflux esophagitis - etiology, pathogenesis, clinical picture.

63. Acute and chronic gastritis - etiology, pathogenesis, pathomorphology forms, clinical picture, diagnosis.
64. Ulcer disease - duodenal and gastric - etiology, pathogenesis, pathomorphology, clinical picture, forms, complications, diagnosis.
65. Stomach cancer - etiology, pathogenesis, pathomorphology, clinical picture, forms, diagnosis.
66. Acute and chronic enteritis. Gluten enteropathy - etiology, pathogenesis, pathomorphology, clinical picture, diagnosis.
67. Chronic ulcerative-hemorrhagic colitis and Crohn's disease - etiology, pathogenesis, pathomorphology, clinical picture, diagnosis.
68. Colon cancer.
69. Irritable bowel syndrome - etiology, pathogenesis, clinical picture, diagnosis.
70. Acute viral hepatitis - etiology, pathogenesis, pathomorphology
71. Chronic hepatitis B.
72. Chronic hepatitis C.
73. Liver cirrhosis - portal hypertension and ascites.
74. Liver cirrhosis - hepatic encephalopathy and hepatic coma.
75. Primary liver cancer - pathomorphology, clinical picture, diagnosis.
76. Cholelithiasis - choledocholithiasis (biliary crisis).
77. Jaundice - types, differential diagnosis.
78. Acute and chronic cholecystitis - etiology, pathogenesis, pathomorphology, clinical picture, diagnosis.
79. Acute pancreatitis - etiology, pathogenesis, pathomorphology, clinical picture, diagnosis.
80. Chronic pancreatitis - etiology, pathogenesis, pathomorphology, clinical picture, diagnosis.
81. Pancreatic cancer - clinical picture, diagnosis.
82. Iron deficiency anemia - classification, etiology, pathogenesis, clinical picture, diagnosis.
83. Vitamin B-12 and folate deficiency megaloblastic anemia - etiology, pathogenesis, clinical picture, diagnosis.
84. Acute leukemia - classification, etiology, pathogenesis, clinical picture, hematological forms, diagnosis.
85. Chronic myelogenous leukemia - etiology, pathogenesis, clinical picture, hematological picture, diagnosis.
86. Chronic lymphocytic leukemia - etiology, pathogenesis, clinical and hematological picture, diagnosis.
87. Plasmacytoma - etiology, pathogenesis, clinical and hematological picture, diagnosis.
88. Essential thrombocytopenia - Myeloproliferative diseases.
89. Hyperthyroidism. Graves' disease - etiology, pathogenesis, clinical picture, diagnosis.

90. Hypothyroidism /Myxedema/ - etiology, pathogenesis, clinical picture, diagnosis.
91. Hypocorticism /Addison's disease/ - etiology, pathogenesis, clinical picture, diagnosis.
92. Cushing's syndrome and disease - etiology, pathogenesis, clinical picture, diagnosis.
93. Diabetes mellitus - complications.
94. Gout - etiology, pathogenesis, clinical picture, diagnosis.
95. Rheumatoid arthritis - etiology, pathogenesis, clinical picture, diagnosis.
96. Ankylosing spondylitis /Bechterew's disease/ - etiology, pathogenesis, clinical picture, diagnosis.
97. Deforming arthrosis - etiology, pathogenesis, clinical picture, diagnosis.

Part IV - basic laboratory tests

98. General properties of urine. Specific gravity. Zimnitsky's test and Folhard's test.
Clinical significance.
99. Protein in urine. Method for qualitative detection and quantitative determination. Types of proteinuria. Clinical significance.
100. Sugar in urine. Methods for qualitative detection and quantitative determination. Clinical significance.
101. Ketone bodies in urine. Methods of examination. Clinical significance. Blood in urine - methods of examination. Clinical significance.
102. Bile pigments in urine. Methods of examination. Clinical significance.
103. Urine sediment. Quantitative determination of formed elements. Clinical significance.
104. Hemoglobin - methods of determination, reference limits, clinical significance.
105. Hematocrit - methods of determination, reference limits, clinical significance.
106. Erythrocyte count. Methods of counting. Reference limits. Clinical significance. Mathematical indicators - clinical significance.
107. Leukocyte count. Methods of counting. Reference limits. Clinical significance.
108. Platelet count. Counting methods. Reference limits. Clinical significance.
109. Erythrocyte sedimentation rate. Westergreen method and Panchenko method. Reference limits. Clinical significance.
110. Blood smear. Erythrocyte morphology. Clinical significance.
111. Differential blood count. Clinical significance. Pathological differential blood counts.
112. Myelogram. Morphology of cells of the erythroblastic order.
113. Myelogram. Morphology of cells of the granulocyte order.
114. Myelogram. Morphology of monocytes, lymphocytes and plasma cells.
115. Myelogram. Morphology of cells of the megakaryocyte order.

REFERENCES

Textbook:

1. Propaedeutics of Internal Diseases, volume 1, CMB, 2021
2. Propaedeutics of Internal Diseases, P.Solakov and St.Kuzmanova, Med. ed. "Raykov", Plovdiv, 2000
3. Propaedeutics of Internal Diseases, ed. Ch. Nachev, Sofia, 1997
4. Harrison's Principles of Internal Medicine, 21 ed.
5. Hutchinson's Clinic methods, M. Swash, WS Saunders, London, 1999.
6. Davidson's Principles and Practice of Medicine, C Livingstone, 1999

Compiled by:
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Approved by a decision of the Council of the Department of INTERNAL DISEASES, SOCIAL MEDICINE, PHYSIOTHERAPY AND REHABILITATION, DISASTER MEDICINE, Protocol № 4...02.07.2025

Head of department:
(Prof. Vladimir Gonchev, PhD)

Approved by a decision of the Faculty Council of the Medical Faculty, Protocol № 26/09.07.2025

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

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. Romyana 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	60	2.0
Seminars			Work with a teacher		
Practical sessions	105	3.5	Self- study work - 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, multi-media 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 antiplastic.
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 POSSIBLE..., Protocol № 214.../.../2025

Head of department: N. H. Zhurav

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

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

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

Approved by!

DEAN:
(Prof. Romyana 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	1
				20	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.
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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-34np.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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Co-authors:

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(Assoc. Prof. ~~Nevena~~ Ivanova)

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.g

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.g

Secretary of the Faculty Council: ..

(Chief Assistant Prof. Dr. Ruska Nenkova) /

BURGAS STATE UNIVERSITY „PROF. DR. ASSEN ZLATAROV”
FACULTY OF MEDICINE
Department of Physics, Biophysics, Roentgenology and
Radiology;

Approved by:

DEAN:

Prof. Rummyana Yankova, PhD



SYLLABUS

Study discipline:	ROENTGENOLOGY AND RADIOLOGY
Specialty:	MEDICINE
Professional field:	7.1. Medicine
Educational and qualification degree:	MASTER
Form of training:	REGULAR

BURGAS, 2026

EXTRACTS FROM THE CURRICULUM

1. GENERAL PARAMETERS OF THE DISCIPLINE					
Total /academic hours/:		180	ECTS:		6
Auditorium classes	Non-auditorium classes		Auditorium ECTS	Non-auditorium ECTS	
105	75		3.5	2.5	
Type of discipline:	Academic hours per week / lectures and practical lessons/		Course:	Semester:	
Mandatory	1 + 2 / 2+2		III и IV	VI и VII	
2. STUDY FORMS					
Auditorium classes	Academic hours	ECTS	Auditorium ECTS	Academic hours	ECTS
Lectures	45	1.5	Consultation	20	0.7
Practical lessons	60	2.0	Individual work - Preparation for practical lessons - Exam preparation	20	0.7
				10	0.3
				25	0.8
3. EVALUATION AND CONTROL					
Forms of evaluation and control				Relative share in the total score	
Session evaluation (exam)				0.4	
Semester (ongoing) assessment				0.6	
Forms of semester control					
- Attendance at lectures and practical classes				0.25	
- regular examination during the practical lessons				0.25	
- Active participation in the practical lessons				0.25	
- Preparation of presentations				0.25	

ANOTATION

Of the study discipline

„Roentgenology and radiology”

Purpose of the study discipline

The study discipline "Roentgenology and radiology" is intended for students of the specialty "Medicine" at the Faculty of Medicine, a regular form of education, graduating with the educational and qualification degree "Master" and the professional qualification "Doctor". Discipline is mandatory according to the Uniform State Requirements.

The **aim** of the training in "Roentgenology and radiology" is to form physicians with broad knowledge of modern imaging methods, their informative value and the imaging symptomatology of the various nosological units in accordance with the medical standards and international requirements of the discipline, as well as the specific characteristics of the work process in structures of radiology, nuclear medicine and radiotherapy.

Structure of learning content

The study discipline includes studying the nature and properties of X-rays, ultrasound waves and magnetic resonance imaging ; the imaging methods of the respiratory, cardiovascular, digestive, urinary, musculoskeletal system of the CNS; the image characteristic of congenital and acquired; inflammatory, neoplastic, traumatic diseases, emergency conditions, etc., as well as invasive and interventional procedures.

Main tasks of the curriculum:

To familiarize medical students with:

- ☐ the indications for reporting imaging studies in the different nosological entities;
- ☐ the preparation of patients for diagnostic imaging modalities
- ☐ the system for interpreting images from different methods
- ☐ the algorithms for conducting and contraindications for imaging methods
- ☐ the principles of safe work and the rules for radiation protection in X-ray examinations
- ☐ the essence, advantages, disadvantages and clinical application of the basic x-ray research methods, as well as other non-x-ray imaging diagnostic methods
- ☐ imaging findings in the most common diseases by systems;
- ☐ the principles of preparation and approach in applying the methods in nuclear medicine and radiation therapy.
- ☐ The principles of implementation, indications and contraindications for the various methods in nuclear medicine and radiation therapy

Teaching methods:

traditional and innovative teaching methods, lectures, practical lessons, discussions, seminars, presentations, teamwork, etc.

Expected results:

After completing the study course in Roentgenology and Radiology, students must have the following theoretical knowledge:

- the nature and properties of X-rays, the principles of X-ray equipment and obtaining an X-ray image, the nature and properties of ultrasound and magnetic resonance imaging and the principles of obtaining images;
- ☐ the basics of radiation protection, working with contrast agents, preparing patients for various imaging studies
- ☐ research methods and visual findings, semiotics of diseases by systems: respiratory, cardiovascular, digestive, urinary, etc.;
- ☐ basic knowledge of the different methods of radioisotope diagnostics and radiotherapy;
- ☐ indications for X-ray examination by nosological units, preliminary preparation, contraindications for X-ray examination
- ☐ the main imaging diagnostic research methods: X-ray, ultrasound, magnetic resonance, nuclear diagnostics;
- ☐ the image-diagnostic symptoms of the most common diseases by organs and systems;
- ☐ the indications and the main invasive and interventional methods in radiology
- ☐ the principles of preparation and approach in applying the methods in radiotherapy and nuclear medicine

Practical skills and knowledge of the study discipline:

- ☐ filling in a form for ordering of different imaging investigations
- recognition and description of normal anatomical structures in various imaging studies
- ☐ description and interpretation of conventional X-ray examinations, CT examinations in diseases of the various systems
- ☐ Preparation of the patient for X-ray and ultrasound examination of the digestive tract.
- ☐ Preparation of the patient for CT and MRI examinations
- ☐ imaging methods and practical approaches in emergency cases (pneumothorax, fractures, acute abdomen, hemothorax).
- ☐ Working with contrast agents in different imaging methods. Principles of preparation in allergic conditions. Rules and conduct.
- ☐ Knowledge of the basic principles of interventional diagnostics and treatment.

- Knowledge of the essence, principles and clinical use of the main methods in nuclear medicine and radiation therapy
- Preparation of the patient for the basic methods in nuclear medicine and radiation therapy.

Forms of assessment of acquired knowledge

A combination of modern and classical methods is used to assess students' knowledge.

Current control:

- ☐ Oral examination before conducting the practical lesson
- ☐ Tests
- ☐ Seminar classes - discussions
- ☐ Evaluation and verification of the protocols at the end of the exercise
- ☐ Colloquium with test part and oral examination

Semester Exam:

- ☐ Test
- ☐ Practical exam
- ☐ Theoretical exam with a written part kept in the archive of the department and an oral part before a committee of qualified teachers

CURRICULUM CONTENT

LECTURES

TOPICS	Hours
1. Physical basics of X-ray diagnostics. Detection, nature and properties of X-rays. X-ray image - essence, principle of obtaining, quality assurance. Visualization of the X-ray image: - conventional; CR, DR. Methods of X-ray diagnostics: fluoroscopy, radiography - essence, advantages, disadvantages, clinical use. Ultrasound diagnostics - essence, principle of obtaining images, advantages, disadvantages, clinical use. Doppler sonography.	2
2. Multislice imaging methods: Computed tomography; Magnetic resonance tomography - essence, principle of image acquisition, advantages, disadvantages, clinical use. Angiographic examination: conventional angiography, CT angiography; magnetic resonance angiography. Invasive and interventional methods in radiology - X-ray, ultrasound, CT and MR control. Basic concepts in X-ray, CT, MR and US diagnostics.	2
3. Contrast agents in imaging diagnostics. Contrast agents in X-ray diagnostics – nature, types, method of administration, preliminary preparation. Contrast agents in CT, MRI and US diagnostics. Radiation protection – nature and principles. Radiation protection of medical personnel and patients in imaging departments. Dosimetry.	2
4. Diagnostic imaging of respiratory system. Imaging methods . Normal imaging anatomy of the respiratory system. Symptoms of impaired bronchial patency - hypoventilation, atelectasis, etc. Inflammatory diseases of the lungs - nonspecific inflammatory diseases - bronchitis, pneumonia, lung abscess, etc. Diseases of the larynx and trachea. Diseases of the bronchi. Bronchiectasis. Diseases of the pleura – pleural effusions, pneumothorax.	3
5. Diagnostic imaging of pulmonary tuberculosis. Classification. Primary pulmonary tuberculosis. Postprimary pulmonary tuberculosis. Pneumoconioses. Silicosis.	2
6. Lung tumors – benign and malignant, primary (central and peripheral), secondary (metastatic). Parasitic diseases – general characteristics. Hydatid cyst disease – imaging features.	2
7. Diagnostic imaging of the cardiovascular system. Methods of examination. Imaging anatomy of the cardiovascular system. General X-ray symptomatology. Mitral valve diseases. Aortic valve diseases. Myocardial diseases. Pericardial diseases.	2

8. Diagnostic imaging of the cardiovascular system. Imaging methods the large blood vessels. Diseases of the aorta – aneurysms, dissections, etc. Diseases of the peripheral arterial vessels, diseases of the venous vessels, diseases of the lymphatic system.	2
9. Interventional methods of diagnosis and treatment. Endovascular therapy in diseases of the CNS, heart, and peripheral vessels. Embolization techniques in benign and malignant tumors.	2
10. Diagnostic Imaging of digestive system. X-ray imaging methods – noncontrast and contrast : basic principles, preparation and application. Contrast X-ray examinations of the esophagus, stomach and duodenum, small intestine. Barium swallow, Barium meal, Barium enema. Diseases of the esophagus – diverticula, strictures, inflammatory diseases, tumors.	2
11. Diagnostic imaging of digestive system. Gastric and duodenal ulcers. Stomach tumors – benign and malignant. X-ray diagnostics of the operated stomach. Intestinal diseases – diverticula, polyps, enteritis, Crohn's disease, small intestine tumors, colitis, colonic tumors. Application of CT and MRI in intestinal diseases. Specialized imaging studies – Virtual colonoscopy, CT and MR enterography	2
12. Diagnostic imaging of the liver, gallbladder, pancreas and bile ducts. Methods of examining diseases of the gallbladder, bile ducts, liver and pancreas. Invasive and interventional methods. ERCP. Gallbladder diseases - cholelithiasis, cholecistitis, tumors, functional disorders. Focal diseases of the liver - tumors, cysts, hemangiomas, abscesses, etc. Diffuse diseases of the liver - cirrhosis, steatosis, etc. Diseases of the pancreas - pancreatitis, tumors. Diseases of the spleen.	2
13. Diagnostic imaging of urinary system. Imaging anatomy. Methods of examination. Congenital anomalies of the kidneys, ureters and bladder. Renal stones. Focal diseases of the kidneys - cysts, tumors - benign, malignant. Bladder diseases. Interventional methods in the urinary system	2
14. Diagnostic imaging of musculoskeletal system. Imaging anatomy. Imaging methods. Main pathological processes in the bones. Traumatic injuries of bones and joints: fractures and dislocations. Congenital hip joint dislocation.	2
15. Diagnostic imaging of musculoskeletal system. Inflammatory bone diseases. Osteomyelitis – types – primary, secondary, traumatic; course – acute, chronic, atypical. Bone and joint tuberculosis – TB of the spine, TB of the knee joint, TB of the hip joint. Rheumatoid arthritis. Ankylosing spondylitis.	2
16. Diagnostic imaging of musculoskeletal system. Avascular necroses. Perthes disease. Rickets. Degenerative diseases – of the hip, knee etc. Diseases of the skull and sinuses. Imaging anatomy and diseases – inflammatory, allergic, cysts, tumors etc.	2
17. Diagnostic imaging of musculoskeletal system. Primary bone tumors – benign, malignant. Secondary/metastatic/ bone tumors – osteolytic, osteoplastic, mixed	2

18. Diagnostic imaging in obstetrics and gynecology. Imaging methods. Diseases.	2
19. Diagnostic imaging of the breast. Imaging methods. Diseases.	
20. Diagnostic Imaging in emergency conditions. Diagnostic imaging in emergency non-traumatic conditions and diseases. Diagnostic imaging in trauma. Algorithms for different types of traumatic injuries.	2
21. Nuclear medicine diagnostics. Radioactivity. Basic physical quantities in nuclear medicine. Basic principles of radionuclide diagnostics. Equipment. Radiopharmaceuticals. Nuclear medicine diagnostics of the endocrine system: thyroid gland, iodine uptake test, auxiliary tests, scintigraphy, gamma camera. Nuclear medicine diagnostics of the urinary system: isotope nephrogram, clearances, residual urine, scintigraphies, gamma camera studies. Nuclear medicine diagnostics of the cardiovascular system: perfusion scintigraphy of the myocardium and cardiac cavities. SPECT-CT – indications, organ symptomatology. PET-CT – indications, organ symptomatology.	2
22. Basics of radiotherapy. Essence, types. Indications, contraindications, results, complications. Radiotherapy planning. GAMMA-KNIFE, CYBER-KNIFE – essence, indications, therapeutic effect.	2
Total hours:	45

PRACTICAL LESSONS (SEMINARS) TOPICS

Topic	Hours
1. Introduction to the structure and organization of the workflow in a radiology clinic. Form for scheduling an imaging examination. X-rays – nature and properties, interaction with matter. Obtaining X-ray images. Geometric properties of the X-ray image. Qualities of the X-ray image. Basic structure of an X-ray machine. X-ray tube. Focus – types of focuses. Control table. Cables. Photo lab. X-ray films and digital X-ray images. Foils. Cassettes. Processing of X-ray images	2
2. Basic X-ray imaging methods: fluoroscopy, Radiography, Computed tomography. Ultrasound, MRI, DSA - nature, advantages, disadvantages, clinical use. Contrast imaging studies. Contrast agents - types, classification, patient preparation. Complications. Radiation protection - basic principles. Radiation protection of medical staff and patients.	2

3. Imaging methods in respiratory system - fluoroscopy, radiography. Computed tomography - indications and informative value of the method. Imaging anatomy. General X-ray symptomatology of diseases of the respiratory system. Types of opacities.	2
4. Chest radiography report. Plan for reporting normal X-ray images and pathological findings /localization, structure, size, shape, outlines, relation to the surrounding structures etc/. X-ray diagnostics of bronchial diseases. Bronchitis. Bronchiectasis. Impaired bronchial patency. Types - hypoventilation, atelectasis, etc. Foreign bodies in the bronchi.	2
5. Diagnostic imaging of nonspecific inflammatory diseases of the lungs. Lobar pneumonia. Bronchopneumonia. Staphylococcus pneumonia. Lung abscess.	2
6. Pleural diseases. Pleural effusions – exudative, loculated, etc. Pneumothorax. X-ray diagnostics of specific inflammatory diseases of the lungs. Pulmonary tuberculosis. Main forms of pulmonary tuberculosis.	2
7. Diagnostic imaging of lung tumors. Benign tumors: congenital and acquired. Malignant tumors. Primary – lung cancer /central and peripheral type/. Peripheral type with apex localization – Pancoast-Tobias tumor. Pulmonary metastases.	2
8. Pneumoconioses. Silicosis. X-ray diagnosis of parasitic diseases of the lungs. Echinococcus cysts – radiological features.	2
9. Diagnostic imaging of the cardiovascular system. Ultrasound diagnostics – echocardiography. X-ray methods – fluoroscopy, radiography, cardiac catheterization, coronary angiography, DSA. CT and MRI diagnostics. Imaging anatomy of the cardiovascular system. Changes in the shape and size of the heart. Pulmonary changes in cardiovascular diseases	2
10. Imaging findings in diseases of the cardiovascular system. Cardiovascular diseases - acquired valvular diseases of the mitral and aortic valves, diseases of the myocardium, diseases of the pericardium.	2
11. Imaging findings in diseases of the cardiovascular system. Diseases of the vessels. Pulmonary embolism. Aorta – aneurysms, dissection, atherosclerosis. Peripheral vessels: arteries – atherosclerosis; veins – postthrombophlebitic syndrome. Lymphatic vessels – diseases of the lymphatic tissue, metastatic changes.	2
12. X-ray diagnostics in dentistry - intraoral imaging - Dick's method, special imaging methods - orthopantomography, normal X-ray anatomy of the teeth, basic diseases - periodontitis, odontogenic tumors.	2
13. Imaging diagnostics in obstetrics - in pregnancy, in anomalies. X-ray diagnostics in gynecology. Examination methods - radiography, HSG, CT, MRI, angiography. Sterility.	2
14. Diagnostic imaging of the breast. Methods of examination – mammography, ductography, Ultrasound, Magnetic resonance imaging. Diseases of the breast – mastopathy, cysts, fibroadenoma, breast cancer.	2

15. Colloquium	2
16. Imaging methods for examining of digestive system. Radiography. Contrast X-ray examinations with Barium sulfate – Barium studies of the esophagus, stomach, small intestine, irrigography. Possibilities of CT and MRI, specialized examinations - virtual colonoscopy, CT and MR enterography. Normal imaging anatomy of the esophagus, stomach and duodenum. X-ray findings of diseases of the digestive tract. Changes in the lumen - width, outlines, additional opacities, filling defects. Changes in the mucosal folds.	2
17. Diseases of the esophagus. Congenital diseases. Functional diseases – achalasia, megaesophagus. Organic diseases – varices, stricture, diverticula and tumors. Foreign bodies in the esophagus.	2
18. Gastric ulcer – Imaging symptoms. Direct – ulcer crater, inflammatory shaft, convergence of mucosal folds. Indirect – morphological, deformation of the stomach, organic incision, functional, spastic incision, cardiospasm, pylorospasm, hypersecretion, change in the passage, etc. Complications of gastric ulcer disease – imaging findings. Imaging diagnostics of operated stomach – peptic ulcer, gastroesophageal reflux, conducting loop syndrome, Dumping syndrome, cancer recurrence, etc. Gastric tumors. Benign – polyps, fibromas, schwannomas, etc. Malignant/carcinoma/: exophytic forms – medullary carcinoma; endophytic form – infiltrative carcinoma, mixed forms.	2
19. Normal X-ray anatomy and X-ray methods of examination of the small and large intestines. Intestinal passage. Barium enema. X-ray diagnostics of diseases of the small and large intestines – X-ray symptoms/symptom of “snowflakes”, changes in the width of the lumen, filling defect, additional opacities, changes in the mucosal relief, polymorphic haustric pattern, “string” symptom. Diagnostic informative value of US, CT and MRI in intestinal diseases.	2
20. Inflammatory bowel diseases - colitis, appendicitis, Crohn's disease	2
21. Colonic tumors. Benign – polyps. Malignant – carcinoma. Urgent imaging of the digestive system.	2
22. Imaging diagnostics of diseases of the gallbladder, bile duct, liver and pancreas. Imaging methods - ultrasound, CT, MRI, ERCP. Diseases of the gallbladder and bile ducts - cholecystitis, cholelithiasis, tumors. Liver diseases - focal (tumors, cysts, hemangiomas, abscesses, etc.) and diffuse (cirrhosis, steatosis, etc.). Diseases of the pancreas - pancreatitis, tumors, etc.	2

23. Diagnostic imaging of the urinary system. Imaging methods of examination – ultrasound, radiography, contrast X-ray methods. CT of kidneys and bladder. MRI. Normal imaging anatomy. Diseases – congenital anomalies; renal stones, hydronephrosis; inflammatory diseases – pyelonephritis, TB of the urinary tract; tumors of the kidneys and bladder.	2
24. Diagnostic imaging of musculoskeletal system. Imaging methods of skeletal examination – radiography, CT, MRI, ultrasound. Osteodensitometry. Normal X-ray anatomy of long, short, flat bone and of a joint. Main pathological processes in the bone system: osteoporosis, osteosclerosis, osteolysis, osteonecrosis, periostosis. Traumatic injuries of bones and joints – fractures, fissures, pathological fractures, distortions and dislocations. Congenital hip dislocation. Hip dysplasia. Aseptic bone necrosis – Perthes' disease, Osgut-Schlatter's disease, Köhler's disease, Freiberg's disease, etc. Rickets.	2
25. Diagnostic imaging of inflammatory bone diseases. Osteomyelitis – acute and chronic form. Atypical forms – panaritium ossale, Brody's abscess, Garre's sclerosing osteomyelitis. Bone and joint tuberculosis. Imaging diagnostics of diseases of the joints and spine – arthritis and arthrosis, ankylosing spondylitis, deforming spondylosis	2
26. Diagnostic imaging of bone tumors. Benign: osteoma, chondroma, osteochondroma, hemangioma, osteoclastoma, solitary bone cyst. Malignant - primary malignant tumors, osteogenic sarcoma, Ewing sarcoma, myeloma; secondary malignant tumors - bone metastases.	2
27. Diagnostic imaging of diseases of the Central and Peripheral nervous system. Skull radiography. CT, MRI, DSG. Cerebral angiography. Cerebrovascular disease, CNS tumors. Posttraumatic cerebral injuries, Diseases of the paranasal cavities. Diseases of the mastoid cells. Diseases of the spinal column.	2
28. Radioactivity. Basic physical quantities in nuclear medicine. Basic principles of radionuclide diagnostics. Equipment. Radiopharmaceuticals. SPECT/CT and PET/CT – essence, basic principles, patient preparation, advantages, disadvantages and clinical use.	2
29. Basic principles of radiotherapy. Percutaneous radiotherapy with high-energy radiation sources. Basic stages in planning and conducting radiotherapy.	2
30. Colloquium	2
Total hours:	60

ROENTGENOLOGY AND RADIOLOGY EXAM
CONSPECTUS (QUESTIONARY)
for medical students

1. Nature and properties of X-rays.
2. Interaction of ionizing rays with matter /penetration, scattering and absorption/.
3. Device of a conventional X-ray system: X-ray tube, high-voltage generator, control table, electron-optical converter.
4. Contrast agents in imaging diagnostics – classification, advantages, disadvantages, application, patient preparation.
5. Conventional X-ray methods – radiography and fluoroscopy. Essence, advantages, disadvantages, clinical use.
6. Ultrasound diagnostics – essence, advantages, disadvantages, clinical use. Doppler sonography.
7. Principle device of a computed tomography system. Obtaining computed tomography images. Essence, advantages, disadvantages and clinical use.
8. Principle of magnetic resonance tomography system. Essence, advantages, disadvantages, clinical use.
9. Radiation protection of personnel in imaging departments. Radiation protection of the patient during imaging studies.
10. Imaging methods for examining the respiratory system - types, essence, disadvantages, clinical use.
11. X-ray anatomy of the respiratory system.
12. Diseases of the bronchi - Bronchitis. Bronchiectasis. Symptoms of impaired bronchial patency - hypoventilation, obstructive emphysema, atelectasis.
13. Nonspecific inflammatory diseases of the lungs. Pneumonia. Lung abscess.
14. Primary pulmonary tuberculosis.
15. Secondary pulmonary tuberculosis.
16. Pleural disease. Pleurisy. Pneumothorax. Hydropneumothorax.
17. Occupational lung diseases. Silicosis.
18. Lung cancer: central and peripheral.
19. Lung metastases. Echinococcal cysts of the lungs.
20. Imaging diagnostics in diseases of the mediastinum.
21. Imaging methods for examining the cardiovascular system - types, essence, advantages, disadvantages, clinical use.
22. X-ray anatomy of the cardiovascular system.
23. Acquired mitral defects. Mitral stenosis. Mitral insufficiency.

24. Acquired aortic defects. Aortic stenosis. Aortic insufficiency.
25. Diseases of the myocardium and pericardium.
26. Diseases of the aorta – aortic aneurysms, aortic dissections. Pulmonary embolism.
27. Imaging methods for examining the digestive system. types, nature, advantages, disadvantages, clinical use.
28. Diverticula of the esophagus. Corrosive esophagitis. Achalasia. Varices of the esophagus. Esophageal cancer.
29. Crohn's disease.
30. Peptic ulcer of the stomach and duodenum. Gastritis.
31. Tumors of the stomach.
32. X-ray diagnostics of acute surgical abdomen. Perforation of a hollow abdominal organ. Impaired intestinal patency.
33. Diverticula of the colon. Colitis.
34. Tumors of the colon. Benign tumors. Colon cancer.
35. Imaging methods for the study of the gallbladder, liver and pancreas.
36. Gallstone disease. Cholecystitis.
37. Focal diseases of the liver. Hepatocellular carcinoma. Liver metastases.
38. Focal diseases of the liver. Hemangioma. Liver cyst. Liver abscess.
39. Diffuse diseases of the liver. Liver cirrhosis. Liver steatosis.
40. Acute and chronic pancreatitis. Pancreatic cancer.
41. Imaging methods for the study of the excretory system. Types, essence, advantages, disadvantages, clinical use.
42. Congenital anomalies of the excretory system. Classification. Types. Imaging symptoms.
43. Inflammatory diseases of the kidneys. Pyelonephritis. Tuberculosis of the urinary system.
44. Kidney stone disease. Hydronephrosis.
45. Kidney tumors.
46. Bladder diseases.
47. Imaging methods of diagnosis of the bone and joint system. Types, essence, advantages, disadvantages, clinical use.
48. Pathological bone processes. Osteoporosis. Osteosclerosis.
49. Pathological bone processes. Osteolysis, Osteonecrosis. Periostosis.
50. Traumatic bone injuries. Fractures and fissures.
51. Traumatic joint injuries. Joint dislocationss. Congenital hip joint dislocation.
52. Osteomyelitis.

53. Rickets.
54. Bone and joint tuberculosis.
55. Main imaging characteristics of benign bone tumors.
56. Benign bone tumors - Osteoma. Chondroma. Osteochondroma.
57. Benign bone tumors - Osteoclastoma. Hemangioma. Bone cyst.
58. Main imaging characteristics of malignant bone tumors.
59. Malignant bone tumors. Osteosarcoma. Ewing's sarcoma. Myeloma. Bone metastases.
60. Avascular necrosis. Perthes' disease.
61. Degenerative diseases of the spine and joints. Spondylosis.
Spondyloarthrosis. Osteoarthrosis.
62. Main imaging symptoms in inflammatory diseases of the joints /arthritis/.
Ankylosing spondylitis
63. Imaging methods in the central and peripheral nervous system.
Types, nature advantages, disadvantages, use.
64. Tumors of the central nervous system.
65. Cerebrovascular diseases of the central nervous system. Types. Imaging symptoms.
66. Posttraumatic hematomas of the CNS - subdural, epidural and intracerebral.
67. Multiple sclerosis.
68. Diseases of the peripheral nervous system. Disc herniations. Tumors of the spinal cord.
69. Diagnostic imaging diagnostics of paranasal cavities.
70. Methods of imaging diagnostics in dental medicine.
71. Diagnostic imaging of the breast. Benign and malignant diseases.
72. Imaging methods in obstetrics and gynecology. Diseases.
73. Basic principles of radiotherapy.
74. Percutaneous radiotherapy with high-energy radiation sources.
75. Basic stages in planning and conducting radiotherapy.
76. Radioactivity. Basic physical quantities in nuclear medicine.
77. Basic principles of radionuclide diagnostics. Equipment. Radiopharmaceuticals
78. SPECT/CT and PET/CT – essence, basic principles, patient preparation, advantages, disadvantages and clinical use.

Textbooks and manuals:

1. Radiology Lecture Course L. Manchev
2. Qureshi Z. The Unofficial Guide to Radiology, 2nd Edition, 2023
3. Clinical Radiology for Medical Students 3rd Edition
by G. M. Roberts, J. P. Hughes, M. D. Hourihan, 1998
4. D. Sutton Radiology and imaging for Medical students, 7th Edition
5. Fred A. Mettler JR. Essentials of Radiology 3rd Edition, Elsevier, 2014
6. Radiopaedia.org
7. <https://radiologyassistant.nl/>
8. <https://www.radiologymasterclass.co.uk/>
9. <https://radiologykey.com/>

Compiled by the curriculum:

(Assoc. Prof. Dr. Lachezar Manchev, MD, PhD)

The curriculum was discussed and adopted at a meeting of the Department of Physics, Biophysics, Roentgenology and Radiology, No. 7

Head of Department

(Assoc. Prof. Dr. Stefka Kasarova)

The curriculum was adopted and discussed at the
Faculty Council of the Faculty of Medicine,
Minutes No. 38 of 09.01.2026.

Secretary of the Faculty Council: ..

(Head of Asst. Prof. Dr. Ruska Nenkova)

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

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	15	0.5
			- Preparing exercises	30	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. Mucocoele and pyocoele. 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. Otitis media
20. Otitis media - thrombophlebitis of the sigmoid sinus
21. Thrombophlebitis of the cavernous sinus
22. Otitis media cerebral abscess
23. Otitis media 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: 

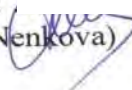
(Assos. Prof. Dr. D. Petkov, MD)

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 30.01.2026 

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 04.02.2026 

Secretary of the Faculty Council: 

(Chief Assistant Prof. Dr. Ruska Nenkova)