Appendix number 1.5 to The Rector UR Resolution No. 12/2019

SYLLABUS
APPLICABLE TO THE EDUCATION CYCLE 2020-2026

Academic year: 2023/2024

1.1. BASIC INFORMATION ABOUT THE SUBJECT/MODULE

Subject/Module Name:	Surgery
Subject/Module Code:*	Ch/F
Name of the Unit Conducting the Course:	College of Medical Sciences, University of Rzeszów
Name of the Unit Implementing the Subject:	Department of Surgery, Institute of Medical Sciences
Field of Study:	General Medicine
Level of Education:	Uniform Master's Studies
Profile:	General Academic
Form of Studies:	Full-time/Part-time
Year and Semester of Study:	Year IV, V, and VI, semesters 7, 8, 9, 10, 11, 12
Type of Subject:	Mandatory
Coordinator:	Artur Iwasieczko
Name and surname of the person conducting / persons conducting	

* optionally, in accordance with the arrangements in the Unit

1.2. Forms of Teaching, Hours, and ECTS Points

Semester (no.)	**Lectures**	**Classes**	Conversations	Laboratory	Seminars	ZP.	**Practical**	Self-Learning	**ECTS Points**
7	15	30	-	-	10	-	-	-	4
8	15	30	-	-	10	-	-	-	3
9	15	30	-	-	10	-	-	-	4
10	15	30	-	-	10	-	-	-	3
11	-	60	-	-	-	-	-	-	4
12	-	60	-	-	-	-	-	-	4

1.3. Mode of Teaching

☑ Traditional classes

☐ Classes conducted using distance learning methods and techniques

1.4. Form of course/module completion (from the curriculum) (exam, graded credit, pass/fail credit)

- Exam

2. PREREQUISITES

Knowledge of the basics of surgery, including: wound management techniques and basic surgical procedures, surgical anatomy, pathophysiology, histopathology, infection treatment, and imaging diagnostics.

3. OBJECTIVES, LEARNING OUTCOMES, PROGRAM CONTENT, AND TEACHING METHODS

3.1. Course Objectives

C1 - Mastery of the theoretical foundations regarding the etiology, symptomatology, diagnosis, and treatment of acute and chronic surgical conditions.
C2 - Getting acquainted with surgical wards, operating rooms, and outpatient clinics.
C3 - Developing skills in examining patients with abdominal conditions and performing basic surgical procedures such as bladder catheterization, wound dressing changes, suture and drain removal, gastric intubation, and venous and arterial catheterization etc.
C4 - Ability to assist during surgical procedures.
C5 - Ability to prepare the operating room and administer local anesthesia.
C6 - Expanding knowledge with elements of urology, endocrinology, and cardiology.
C7 - Mastery of the theoretical and practical fundamentals in thoracic and general surgery, cardiac surgery, transplantology, and vascular surgery.

3.2. LEARNING OUTCOMES

EK (the effect of education)	The content of the learning outcome defined for the course (module).	Reference to direct learning effect
Knowledge: The graduate knows and understands		
EK_01	Causes, symptoms, principles of diagnosis, and therapeutic management of the most common diseases requiring surgical treatment in adults, including: 1. Acute and chronic abdominal diseases 2. Thoracic diseases 3. Diseases of the limbs, head, and neck 4. Bone fractures and organ injuries 5. Tumors	F. W1
EK_02	Causes, symptoms, principles of diagnosis, and therapeutic	F. W2

	management of the most common congenital defects and diseases requiring surgical treatment in children.	
EK_03	Basic surgical techniques, both classical and minimally invasive.	F. W3
EK_04	Principles of patient qualification for basic surgical procedures and invasive diagnostic-therapeutic interventions, as well as the most common complications.	F. W4
EK_05	The most common complications of modern oncological treatment.	F. W5
EK_06	Principles of perioperative safety, patient preparation for surgery, administration of general and local anesthesia, and controlled sedation.	F. W6
EK_07	Principles of postoperative care, including pain management and postoperative monitoring.	F. W7
EK_08	The most common life-threatening conditions in children and adults and the principles of management in these situations, particularly in: 1. Sepsis 2. Shock 3. Hemorrhages 4. Fluid-electrolyte and acid-base imbalances 5. Poisonings 6. Burns, hypothermia, and hyperthermia 7. Other acute conditions of: a) Cardiovascular origin b) Respiratory origin c) Neurological origin d) Renal origin e) Oncological and hematological origin f) Diabetological and endocrinological origin g) Psychiatric origin	F. W10

	h) Ophthalmological origin i) Otolaryngological origin j) Gynecological, obstetric, and urological origin	
EK_09	Invasive methods of pain management.	F. W13
EK_10	Issues related to modern imaging studies, particularly: 1. Radiological symptomatology of common diseases 2. Instrumental methods and imaging techniques used in medical procedures 3. Indications, contraindications, and patient preparation for various types of imaging studies, as well as contraindications to the use of contrast agents	F. W17
EK_11	Conditions in which life expectancy, functional status, or patient preferences limit adherence to standard disease-specific guidelines.	F. W22
Skills: The graduate is able to:		
EK_12	Perform a surgical hand scrub, put on sterile gloves, dress appropriately for surgery or a sterile procedure, prepare the surgical field according to aseptic principles, and actively participate in a surgical procedure.	F. U1
EK_13	Apply and change a sterile dressing.	F. U2
EK_14	Assess and manage a simple wound, including administering local anesthesia (topical or infiltration), applying and removing surgical sutures, and applying and changing a sterile surgical dressing.	F. U3
EK_15	Recognize the most common life-threatening conditions, including using various imaging techniques.	F. U4
EK_16	Identify the most common types of fractures, particularly long bone fractures, based on radiological examination.	F. U5
EK_17	Provide emergency immobilization of a limb, select the appropriate type of immobilization in common clinical situations, and assess circulation in the limb after applying the immobilization dressing.	F. U6
EK_18	Immobilize the cervical and thoracolumbar spine after trauma.	F. U7
EK_19	Manage external bleeding.	F. U8
EK_20	Deliver bad news using a selected protocol, such as: 1. **SPIKES**: • **S** (Setting) – Ensure an appropriate environment	F. U21

	• **P** (Perception) – Assess the recipient's understanding • **I** (Invitation/Information) – Invite conversation/provide information • **K** (Knowledge) – Deliver the bad news • **E** (Emotions and empathy) – Address emotions with empathy • **S** (Strategy and summary) – Develop a plan and summarize 2. **ABCDE**: • **A** (Advance preparation) – Prepare for the conversation • **B** (Build therapeutic environment) – Establish a supportive connection • **C** (Communicate well) – Deliver the bad news effectively • **D** (Dealing with reactions) – Manage emotional responses • **E** (Encourage and validate emotions) – Acknowledge, redirect, and appropriately respond to emotions, leading to a proper closure Additionally, support the family through the process of a patient's dignified passing and inform them about the patient's death with compassion and clarity.	
EK_21	Gather information from team members with respect for their diverse opinions and specialized competencies, incorporating these insights into the patient's diagnostic and therapeutic plan. Additionally, apply communication protocols such as: • **ATMIST** (Age, Time of incident, Mechanism of injury, Injuries found, Signs and symptoms, Treatment given) • **RSVP/ISBAR** (Reason, Situation, Vital signs, Plan / Introduction, Situation, Background, Assessment, Recommendation)	F.U22
Social Competencies: The graduate is prepared to:		
EK_22	Establish and maintain a deep and respectful relationship with the patient while demonstrating understanding of ideological and cultural differences.	K.01
EK_23	Act in the best interest of the patient.	K02
EK_24	Adhere to medical confidentiality and respect patients' rights.	K.03

EK_25	Take actions for the patient based on ethical principles, with awareness of the social determinants and limitations imposed by the disease.	K.04
EK_26	Recognize and acknowledge personal limitations, conduct self-assessment of deficits, and identify educational needs.	K.05
EK_27	Promote health-conscious behaviors.	K.06
EK_28	Use objective sources of information.	K.07
EK_29	Draw conclusions from personal measurements or observations.	K.08
EK_30	Implement principles of professional collegiality and teamwork, including collaboration with representatives of other medical professions, also in multicultural and multinational environments.	K.09
EK_31	Formulate opinions on various aspects of professional practice.	K.10
EK_32	Assume responsibility for decisions made during professional activities, including in terms of personal and others' safety.	K.11
EK_33	Promote health-conscious behaviors.	K.12

3.3. PROGRAM CONTENT

A. Lecture Topics:

Semester 7

• Introduction to Surgery

• Basic Surgical Definitions

• Metabolic Response to Trauma and Shock

• Infections and Antibiotics in Surgery

• Wound Management

• Acute Abdominal Diseases – Symptoms, Diagnosis, Differential Diagnosis, Treatment

• Peritonitis

• External and Internal Hemorrhages – Causes, Classification, Symptoms, Hemostasis, Pharmacological Treatment

• Postoperative Care and Complications

• Injuries – Open and Closed Traumatic Injuries

• Wound Healing Mechanisms

• Classification of Fractures and Dislocations

• Thermal and Chemical Injuries – Burns, Frostbite, Electrical Injuries

• Modern Perspectives on Wound Healing

Semester 8

• Fundamentals of Gastrointestinal Surgery

• Acute Abdomen and Diagnosis of Acute Abdominal Conditions

• Abdominal Wall and Abdominal Hernias

• Basics and Specific Aspects of Pediatric Surgery

• Acute Abdomen in Children

• Fundamentals of Cardiac Surgery

• Extracorporeal Circulation, ECMO, and Mechanical Circulatory Support

• Surgical Treatment of Coronary Artery Disease

Semester 9

• Use of Imaging Studies in Gastrointestinal Surgery

• Treatment Methods for Gastrointestinal Tumors

• Preoperative Care and Perioperative Management

• Surgical Treatment of Heart Valve Defects – Types of Artificial Valves

• Surgical Treatment of Heart Valve Disorders

• Introduction to Pediatric Orthopedics and Traumatology

• Fundamentals of Pediatric Urology

Semester 10

• Surgical Treatment of Lung Cancer

• Thoracic Trauma and Other Emergencies in Thoracic Surgery

• Facial Skull Injuries and Their Treatment

• Oral and Craniofacial Tumors

• Principles of Surgical Cancer Treatment

• Modern Technologies in Surgical Oncology

• Abdominal Aortic Aneurysms and Peripheral Vascular Aneurysms

• Emergencies in Vascular Surgery

• Acute and Chronic Lower Limb Ischemia – Surgical Treatment

B. Practical Classes:

Semester 7

• Organization of the Surgical Ward and Patient Flow in the Hospital

• Medical Documentation Management

• Operating Room Organization

• Rules for movement in the operating room

• Principles of surgical handwashing and preoperative preparation of the surgical field

• Patient Interview and Physical Examination

• Conducting a medical history with a focus on surgical conditions

• General physical examination of patients

• Planning diagnostic tests

• Differential diagnosis of surgical diseases and interpretation of findings

• Examination Techniques

• Local assessment of the patient's condition

• Peritoneal signs in acute abdominal conditions

• Digital rectal examination

• Qualification for emergency, delayed, elective surgical treatment, or conservative management

• Basic Bedside Procedures

• Dressing changes and postoperative wound monitoring

• Suture and drain removal

• Intravenous access placement

• Blood sampling (venous, arterial, and capillary)

• Fluid transfusions and cleansing enemas

• Patient Preparation for Surgery

• Gastric intubation

• Bladder catheterization

• Connection of monitoring equipment

• Assessment of surgical risk

• Postoperative care principles – bedside exercises

• Surgical Instruments

• Types of surgical tools, nomenclature, and applications

• Types of suture materials

• Techniques of wound closure and knot tying – hands-on skill acquisition

• Emergency Room Workflow and Documentation

• Patient admission process and hospital transport procedures

• Familiarization with surgical departments

• Intensive Postoperative Care

• Monitoring, treatment, and ICU documentation

Wound Healing

• Skin Structure

• Phases of Wound Healing

• Factors Affecting Wound Healing

• Scar Formation

• Abnormal Wound Healing

Infected and Hard-to-Heal Wounds

• Risk Factors

• Clinical Wound Assessment

• Treatment Strategies

• Wound Management Techniques

• Specialized Dressings

• Negative Pressure Wound Therapy (VAC Therapy)

Pressure Ulcers

• Risk Factors

• Etiology

• Prevention Principles

• Classification

• Treatment

Postoperative Care in the Intensive Care Unit

• Patient Monitoring

• Types of Vascular Access for Monitoring and Drug Administration

• Fluid Therapy

• Fluid Balance Assessment

• Bladder Catheterization

Drainage Systems and Asepsis in Surgery

• Principles and Types of Body Cavity Drainage Systems

• Fundamentals of Surgical Asepsis

• Surgical handwashing techniques

• Surgical attire

• Proper use of sterile gloves and gowns

Hospital-Acquired Infections

• Patient's Informed Consent for Surgery

• Preoperative Patient Preparation

Semester 8

• Demonstration of Surgical Patients

• Patient History Taking and Discussion

• Physical Examination of Patients

• Techniques depending on the type of condition

• Emergency Trauma Room Management

• Principles of handling trauma patients in Clinical Departments

• Postoperative Intensive Care Unit

• Practical principles for managing patients in shock

• Practical Training in the Operating Room

• Surgical instruments – classification and usage

• Learning surgical wound suturing

• Methods of sterilizing surgical instruments and dressing materials

• Antiseptic techniques for hand disinfection and surgical site preparation

• Qualification for Surgical Procedures

• Basic indications for vascular surgery procedures

• Case-based discussion using examined patients

• Organization of the Surgical Ward

• Specific aspects of pediatric surgery

• Perioperative management

• Day Surgery Procedures

• Basic pediatric surgical procedures in the operating room

• Pediatric trauma management in the emergency department

• Cardiac Surgery

• Structure and workflow of the cardiac surgery department

• Extracorporeal circulation

• Surgical access techniques in cardiac surgery

• Thoracic Surgery

• Physical examination and additional diagnostic and imaging studies

• Specifics of cardiac surgical procedures

• Patient preparation for surgery, surgical procedures, and postoperative care

Semester 9

• Neonatal Surgery Unit Workflow

• Organization and structure of the neonatal surgery department

• Preoperative preparation of a newborn

• Perioperative care in neonatal surgery

• Pediatric Surgery Procedures – Operating Room Training

• Outpatient Surgical Clinic (Adults & Children)

• Basic surgical procedures performed in an outpatient setting

• Practical Sessions in Endoscopy and Ultrasound Laboratories

• Training in the Surgical Outpatient Clinic

• Examination of patients

• Assisting in dressing changes, intravenous fluid administration, and blood product transfusion

• Postoperative Patient Care

• Monitoring and managing patients in the postoperative period

• Surgical Skills Training

• Learning to tie surgical knots and the principles of desmurgiology

• Surgical suturing techniques

• Operating Room Training

• Hands-on participation in surgical procedures

• Cardiac Surgery Unit

• Specifics of the cardiac surgery ward

• Extracorporeal circulation (ECMO)

• Participation in cardiology-cardiac surgery consultations

• Qualification for cardiological and surgical procedures

• Introduction to Robotic Surgery

• Types and basic functioning of surgical robots

• Pediatric Oncologic Surgery

• Surgical management of pediatric cancers

Semester 10

Maxillofacial Surgery

• Fundamentals and specifics of maxillofacial surgery

• Participation in maxillofacial surgeries

• One-day surgical procedures in maxillofacial surgery

• Oral and craniofacial tumors

• Salivary gland diseases and surgical treatment

• Congenital anomalies of the oral cavity and craniofacial region – surgical treatment

• Maxillary sinus diseases and treatment

Thoracic Surgery

• Primary spontaneous pneumothorax

• Lung cancer – patient examination

• Congenital chest wall deformities and breast surgery

• Emergency procedures in thoracic surgery

• Respiratory function assessment and cough reflex evaluation

• Bedside and dressing room procedures

Thoracic Trauma

• Rib and/or sternum fractures

• Pneumothorax and/or hemothorax

• Pulmonary contusion, diaphragmatic rupture, penetrating chest wounds – pathology, classification, diagnosis, and treatment

• Simultaneous chest and abdominal injuries – types, diagnosis, and treatment

Thoracic Oncology

• Lung cancer – patient examination and surgical treatment principles

• Early detection strategies for lung cancer

• Other lung tumors – examination and surgical management

• Pneumothorax in lung disease progression

• TNM clinical staging classification in lung cancer

Thoracic Procedures

• Indications and techniques for pleural puncture and lavage – result interpretation

• Indications and techniques for pleural cavity drainage

• Chest wall tumors – types, diagnosis, and treatment

• Recognition of respiratory disorders and signs of hypovolemia – patient examination

• Purulent lung diseases and empyema – classification, diagnosis, and treatment

• Esophageal perforations and mediastinitis – types, diagnosis, and treatment

• Local and systemic signs of infection – patient examination

Vascular Access and Diaphragmatic Disorders

• Indications and technique for venous cutdown and venipuncture with catheterization

• Diaphragmatic hernias and paralysis – classification, diagnosis, and treatment

Polytrauma and Critical Care in Thoracic Injuries

• Definition and severity assessment (AIS-ISS) of multiple trauma

• Causes of potential and immediate life-threatening conditions in thoracic diseases and injuries – diagnosis and emergency management

Oncologic Surgery

• Basics and specifics of oncologic surgery

• Principles of surgical cancer treatment

• The role of preventive surgery in oncology

• Reconstructive surgery

• Modern technologies in oncologic surgery

• Participation in oncologic surgeries

• Working with oncology patients

Vascular Surgery

• Basics of vascular surgery

• Diagnostic methods in vascular surgery

• Acute conditions in vascular surgery

• Aneurysms and their surgical treatment

• Venous diseases and their surgical management

• Acute and chronic limb ischemia – surgical approaches

• Endovascular and hybrid surgery

Robotic Surgery

• Applications of surgical robots in various surgical fields

• Indications and contraindications for robotic-assisted surgery

Course Content – Year VI

• Participation in the Daily Work of the Surgical Department

• Assisting in Surgical Procedures

• Preparation of the Surgical Field

• Performing Simple Local Anesthesia

• Qualification/Disqualification of Patients for Surgery and Surgical Risk Assessment

• Obtaining Informed Consent for Surgery

• Preoperative and Postoperative Patient Care

• Planning Preoperative and Postoperative Diagnostics

• Emergency Management in Surgery

• Patient Examination and Medical History Collection Before and After Surgery

• Performing Pleural Cavity Drainage

• Wound, Abscess, and Infection Management

• Recognition and Treatment of Pressure Ulcers

• Prophylactic and Therapeutic Antibiotic Therapy

• Blood Product Therapy

• Understanding Blood Coagulation Mechanisms

• Principles of Surgical Cancer Treatment

• The Role of Preventive Surgery in Oncology

C. Seminar Topics:

Course Content – Semester 7

• **Asepsis and Antisepsis in Surgery**

• **Wounds**

• Types, assessment, and surgical management

• Wound healing mechanisms

• **Pathophysiology and Treatment of Burns**

• **Tetanus and Gas Gangrene Prevention**

• **Recognition and Treatment of Local and Systemic Surgical Infections**

• **Purulent Skin and Subcutaneous Tissue Conditions**

• Boils, paronychia, felon, abscesses, phlegmon – diagnosis, incision, drainage, and pharmacological treatment

• **Abdominal Wall Hernias**

• Types, anatomy, diagnosis, differential diagnosis, and treatment

• **Surgical Conditions of the Gallbladder and Biliary Tract**

• Symptoms, diagnosis, and modern treatment approaches

• Obstructive jaundice – etiology, pathogenesis, differential diagnosis, and treatment

• **Diagnostic and Interventional Endoscopy**

• Upper and lower gastrointestinal tract disorders

• **Historical Overview of Surgery**

• Surgical advancements and their determining factors

• Specialties derived from general surgery

• **Acute Surgical Conditions of the Abdomen**

• Peritoneal signs in abdominal surgery

• **Role of Anesthesia and Postoperative Care in Surgical Patients**

Semester 8.

• **Specifics of Surgical Examination**

• **Basic Principles of Differential Diagnosis in Surgery**

• Consideration of the latest diagnostic methods, including:

• **Endoscopic techniques**

• **Ultrasound imaging (ultrasonography)**

• **Computed tomography (CT scanning)**

• **Injuries to Internal Organs**

• **Wounds**

• Types, healing mechanisms, and surgical treatment

• **Organizational System of Pediatric Surgical Care**

• **One-Day Surgery**

• Basic pediatric surgical procedures

• **Common Pediatric Injuries**

• **Acute Abdominal Conditions in Children**

• Including **"acute scrotum"**

• **Burn Management**

• **Neonatal Surgery**

• **Extracorporeal Circulation (ECMO)**

• **Types of Heart Valve Prostheses**

• Advantages and disadvantages of different valve types

• **Diseases of the Thoracic Aorta**

Semester 9

• **Patient Qualification and Preparation for Surgery**

• Surgical risk assessment and principles of postoperative management

• **Pediatric Surgical Conditions**

• **Peritonitis in children**

• **Appendicitis in children**

• **Pancreatic Surgery**

• Acute pancreatitis and surgical treatment of pancreatic diseases

• **Endocrine Surgery**

• Surgery of the **thyroid and parathyroid glands**

• **Gastrointestinal Surgery**

• **Stomach and duodenum surgery**

• **Biliary tract surgery**, including laparoscopic techniques

• **Spleen and liver surgery**

• **Portal hypertension and its surgical management**

• **Intestinal obstruction**

• **Colon surgery**

• **Rectal and anal surgery**

• **Cardiothoracic Surgery**

• **Cardiac tamponade** – etiology, diagnosis, and surgical treatment

• **Acute pulmonary artery embolism** – etiology, diagnosis, and surgical treatment

• **Surgical treatment of congenital heart defects**

• **Introduction to Robotic Surgery**

• Fundamentals and applications of robotic-assisted surgery

Semester 10

Thoracic Surgery

• **Lung Cancer and Other Pulmonary Tumors**

• **Pleural Tumors** – Types, diagnosis, and treatment principles

• **Esophageal Cancer and Other Esophageal Diseases**

• **Esophageal Perforation**

• **Primary and Secondary Spontaneous Pneumothorax**

• **Thoracic Trauma**

• **Congenital Chest Wall Deformities**

Maxillofacial and Craniofacial Surgery

• **Fundamentals of Maxillofacial and Craniofacial Surgery**

• **Surgical Treatment of Sinus and Salivary Gland Diseases**

• **Oral Cavity Tumors**

Oncologic Surgery

• **Principles of Surgical Cancer Treatment**

• **Preventive Surgery in Oncology**

• **Surgical Reconstruction Techniques**

Vascular Surgery

• **Chronic Venous Disease of the Lower Limbs** – Pathophysiology, diagnosis, and treatment

• **Treatment of Venous Ulcers**

• **Proctologic Diagnostics**

• **Chronic Venous Insufficiency of the Lower Limbs**

• **Deep Vein Thrombosis (DVT) and Superficial Vein Thrombosis**

• **Pulmonary Embolism**

• **Acute and Critical Limb Ischemia** – Symptoms, diagnosis, and treatment

• **Aortic and Peripheral Artery Aneurysms**

Robotic Surgery

- **Application of Surgical Robots in Selected Surgical Specialties**
- **Patient Qualification for Robotic Surgery**
- **Indications and Contraindications for Robotic-Assisted Surgery**

Course Content – Year VI

Review and Repetition of Key Surgical Topics:

1. **Organization and Functioning of the Surgical Ward and Operating Room**
2. **Emergency and Life-Threatening Conditions in Gastrointestinal Surgery**
3. **Emergency and Life-Threatening Conditions in Vascular Surgery**
4. **Emergency and Life-Threatening Conditions in Cardiac Surgery**
5. **Emergency and Life-Threatening Conditions in Thoracic Surgery**
6. **Emergency and Life-Threatening Conditions in Pediatric Surgery**
7. **Management of Maxillofacial and Craniofacial Trauma**
8. **Principles of Surgical Cancer Treatment**
9. **Tracheostomy – Elective, Urgent, and Emergency Procedures**
10. **Surgical Risk Assessment Before an Operation**

3.4. Teaching Methods

- **Lecture:** Lecture with presentation
- **Exercises:** Practical training sessions
- **Seminar:** Lecture, Interactive exercises with students, Independent student work

Student Preparation and Participation in Research Work:

• **Formulating Research Hypotheses** based on scientific publications

• **Defining the Research Problem** and developing an appropriate research methodology using well-selected scientific literature

• **Working with Scientific Databases** to gather relevant information

• **Active Participation** in planning and conducting research tasks

• **Processing and Analyzing Experimental Results**

• **Performing Statistical Analysis**

• **Formulating and Interpreting Conclusions** based on research findings

• **Contributing to the Preparation of Scientific Publications**

Independent Student Work: Self-study using textbooks and academic literature.

4. METHODS AND ASSESSMENT CRITERIA

4.1. Methods for Assessing Learning Outcomes:

EK (the effect of education)	**Methods for Assessing Learning Outcomes: (**Quiz/Test, Oral Examination, Written Examination, Project, Report, Observation During Classes)	Forms of Educational Activites (L, PE, S)
EK_01-EK_06	**Written quiz with open-ended, closed-ended, and problem-solving questions.**	L, S.
EK_07-EK_33	**Practical assessment – case analysis.**	PE, S

4.2. Conditions for Passing the Course:

All information regarding the rules for conducting and participating in classes is included in the **Regulations for Clinical Classes**, which every student is required to review before the start of the course.

Course Completion Requirements – Year IV and V

1. **Full participation and active engagement** in practical exercises and seminars.

2. **Full attendance in lectures.**

3. **Final written assessment with a grade** – Single-choice test.

Practical Exercises

• The final grade includes:

• **Active participation in exercises**

• **Practical assessment**

Seminars

• The final grade includes:

1. **Active participation in seminars / Preparation of a case study**

2. **Final test results**

Lectures

• Completion requires passing the **final test.**

Course Completion Requirements – Year VI

Practical Exercises

The final grade includes:

• **Active participation in exercises**

• **Completion of procedures assigned to the subject** in the *Clinical Practical Training Logbook*

• **Practical assessment** – a prerequisite for taking the theoretical exam:

• The student must independently conduct a **complete medical history (subjective examination) and physical examination** of a selected patient.

• **Passing criteria:**

• Correct presentation of **basic differential diagnosis**

• Proposal of **appropriate additional diagnostic tests**

• Suggestion of an **adequate treatment plan**

Final Exam:

Surgery Exam Regulations

The **surgery exam** takes place **after the completion of the entire surgical training cycle**, at the end of **the 12th semester**, during the **summer examination session**.

The exam consists of **two stages**:

1. **Practical Module**

2. **Written Module**

Exam Passing Criteria:

• The **practical exam must be passed first** before taking the written exam.

• **Passing the practical exam** is a prerequisite for **admission to the written exam**.

A. Practical Exam:

Practical Exam Module

The **practical exam** is conducted in **selected surgical clinics and departments** designated by the **Head of the Department of Surgery** that provide surgical education.

Assessment Criteria:

During the practical exam, students are evaluated on:

- **Practical knowledge of surgery**
- **Physical examination skills**
- **Analysis and interpretation of symptoms**
- **Analysis and interpretation of test results**
- **Diagnostic planning**
- **Treatment planning and description of therapeutic approaches**
- **Recognition and management of emergency and life-threatening surgical conditions**

Passing the Practical Module:

- **Successful completion of the practical exam** is a prerequisite for taking the **written exam**.

Written Exam Module

The written exam is conducted in the form of a single-choice test. The questions cover the entire surgery curriculum as outlined in the program. Grading is based on the percentage of correct answers according to the assessment criteria specified below.The schedule (dates and locations) for both exam modules is determined by the Head of the Department of Surgery for each student group.

Grading scale based on the percentage of correct answers:

- 93-100%: Excellent (5.0)
- 85-92%: Very Good (4.5)
- 77-84%: Good (4.0)
- 69-76%: Satisfactory Plus (3.5)
- 60-68%: Satisfactory (3.0)
- Below 60%: Fail (2.0)

Social Competence Evaluation:

- Continuous assessment by instructors (observations, discussions)
- Peer and patient feedback

5. STUDENT WORKLOAD AND ECTS POINTS

The total student workload necessary to achieve the expected learning outcomes, expressed in hours and ECTS credits:

Year IV:

- Contact hours: 110
- Independent study (preparing for classes, exams, reports, etc.): 90
- Participation in consultations and exams: 10
- **Total: 210 hours, 7 ECTS credits**

Year V:

- Contact hours: 110
- Independent study: 82
- Participation in consultations and exams: 8
- **Total: 200 hours, 7 ECTS credits**

Year VI:

- Contact hours: 120
- Independent study: 74
- Participation in consultations and exams: 6
- **Total: 200 hours, 8 ECTS credits**

6. PROFESSIONAL INTERNSHIPS

- N/A

7. LITERATURE

Principles and Practice of Surgery 8th edition O. James Garden, Rowan W. Parks, Stephen J. Wigmore, Elsevier

Essential Surgery, 6th Edition, Philip J. Deakin & Clive R. G. Quick

Sabiston Textbook of Surgery, 21st Edition Courtney M. Townsend

100 Cases in Surgery, James A Gossage, Bijan Modarai

Approval of the Head of the Department or Authorized Person.