



COURSE UNIT DESCRIPTION

Course unit title	Code
Anaesthesiology and Reanimathology; General Surgery	

Lecturer(s)	Department(s)
<p>Coordinating Prof. Dr. (HP) Jūratė Šipylaitė Others: Assoc. Prof. Dr. Darius Činčikas, Assoc. Prof. Dr. Ieva Jovaišienė, Assoc. Prof. Dr. Andrius Klimašauskas, Assoc. Prof. Dr. Eglė Kontrimavičiūtė, Assoc. Prof. Dr. Mindaugas Šerpytis, Assist. Dr. Diana Gasiūnaitė, Lect. Lukas Gambickas, Lect. Rapolas Kuprys, Lect. Vilma Kuzminskaitė.</p> <p>Prof. Dr. (HP) Gintautas Brimas Others: Prof. Dr. Tomas Poškus, Assist. Dr. Žygimantas Juodeikis, Assist. Dr. Bronius Buckus, Assoc. Prof. Dr. Audrius Dulskas</p>	<p>Faculty of Medicine, Institute of Clinical Medicine, Clinic of Anaesthesiology and Intensive Care, Santariskiu str. 2, Vilnius</p> <p>Department of Gastroenterology, Nephrourology & General surgery, Center of General Surgery, 29 Šiltnamių str, Vilnius</p>

Cycle	Level of the course unit	Type of the course unit
First cycle (integrated studies)		Compulsory

Mode of delivery	Period of delivery	Language of instruction
Face-to-face, lectures and seminars in the auditorium, practice in the operating theatre, surgery departments, intensive care unit and simulator class.	Year III, V semester;	Lithuanian, English

Prerequisites and corequisites	
Prerequisites: A student must have been completed the following courses: human anatomy, human physiology, propedeutics.	Corequisites (if any):

Number of ECTS credits allocated to the course unit	Total student's workload	Contact hours	Self-study hours
5	133	66	67

Purpose of the course unit Programme competences to be developed		
The purpose of the course - to teach the ethiology and pathophysiology of acute and chronic pain, impact on the human body, principles of pain management, methods of anaesthesia and analgesia, resuscitation standards and algorithms. Graduates should know how to perform the preoperative assessment, determine the physical status and risk of anaesthesia, evaluate the adequacy of the anaesthesia and vital functions of the patient, and provide initial and special resuscitation when needed; to understand basics of aseptics and antiseptics, general standards of surgical operation and postoperative period, most common postoperative complications, diagnosis and treatment of the diseases, solely attributed to general surgery.		
Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
General competence acquired by the student during the course:		

Be honest and behave according to the basic ethical principles, be critical and self-critical in decision-making, be creative, show initiative at work and focus on the main purposes, also being good member of the team.	Practical training in the operating theatre and intensive care unit, also in the simulator class.	Continuous evaluation of knowledge and skills achieved in the operating theatre, intensive care unit and simulator class.
To know the limits of his own competence and seek for help from colleagues in a timely manner, solve the problems and make decisions, be communicative and be active in the team-work with experts from other specialties.	Practical training in the operating theatre and intensive care unit, also in the simulator class.	Continuous evaluation of knowledge and skills achieved in the operating theatre, intensive care unit and simulator class.
Specialty competence acquired by the student during the course:		
Pre-anaesthetic assessment and consulting of the patient according safe anesthesia principles: collecting the patient's history of illness, basic medical examination, defining the clinical conclusion of the assessment and decision-making, obtain informed consent of the patient and provide reassurance; choosing the most appropriate anaesthesia and analgesia methods and techniques, also medication and other modalities for the specific clinical setting, always taking into account the risk versus benefit ratio.	Analysis and discussion of the clinical cases in the operating theatre and intensive care unit.	Continuous evaluation of knowledge and skills achieved in the operating theatre, intensive care unit and simulator class. Exam in a written form at the end of the course.
Basic knowledge of safe intensive care medicine and resuscitation according European Resuscitation Council guidelines.	Practical training in the intensive care unit, also in the simulator classes and workshop-stations, lectures.	Continuous evaluation of knowledge and skills achieved in the intensive care unit and simulator classes, also during analysis of clinical cases. Exam in a written form at the end of the course.
Perform procedures: measure arterial blood pressure, oxygen therapy, safe transportation of patients, ECG, monitoring and evaluation of the main blood and respiratory function indicators.	Practical training in the operating theatre and intensive care unit, also in the simulator class.	Continuous evaluation of knowledge and skills achieved in the operating theatre and intensive care unit.
Explore the patient with possible surgical pathology, for whom the operation is planned: to make the anamnesis, perform medical inspection, palpation, percussion, auscultation, and other objective clinical tests, to evaluate them, make conclusion and take the decision.	Case demonstration and analysis, situation modelling, group discussion, the writing of patient's case history	Written analysis of the case (academical patient's case history), test (closed and open type tasks/questions). Written test will be given at the end of the course
Understand the main principles of the diagnostics, differential diagnostics principles and methods and their importance in surgical diseases. To make individual patients exploration plan and to prove it, evaluate performed clinical tests and present their clinical evaluation. To understand how to analyse diagnostic algorithms.	Case demonstration and analysis, information search, reading of the literature, preparation and delivery of presentation, situation modelling, group discussion,	Written analysis of the case (academical patient's case history), test (closed and open type tasks/questions). Presentation. Written exam test will be given at the end of the course

	review of video materials of operations, the writing of patient's case history	
To understand the main treatment principles of emergency surgical diseases, the methods, complications and their importance. To choose proper and suitable method of surgical treatment, to combine it with other treatment methods in clinical context. To evaluate the suitability, potential benefit and possible of treatment method. Inform properly the patient about treatment methods and possibilities, the responsibility of medical personnel. To understand how to analyse diagnostic algorithms.	Case demonstration and analysis, information search, reading of the literature, preparation and delivery of presentation, situation modelling, group discussion, review of video materials of operations, the writing of patient's case history	Written analysis of the case (academical patient's case history), test (closed and open type tasks/questions). Presentation. Written exam test will be given at the end of the course
Evaluate the results and prognosis of the surgical treatment. Discuss the treatment results with the patient, postoperative recommendations, other explanations.	Case demonstration and analysis, situation modelling, group discussion, review of video materials of operations, the writing of patient's case history	Written analysis of the case (academical patient's case history), test (closed and open type tasks/questions). Written exam test will be given at the end of the course
Understand the principles of co-operation in clinical practice, communicating with staff, patients and their relatives.	Case demonstration and analysis, situation modelling, group discussion, the writing of patient's case history	Written analysis of the case (academical patient's case history), test (closed and open type tasks/questions). Written exam test will be given at the end of the course
To know how to to apply the principles of antiseptic and aseptic. To be able to perform wound management.	Practice with operation simulators, group discussion, review of video materials of operations	Practical test with operation simulators
Appropriate storage and protection of medical documentation, be able to search for medical information sources, to analyse, summarize and deliver; to keep and update professional information.	Case demonstration and analysis, information	Written analysis of the case (academical patient's case history), test (closed and open type tasks/questions).

	search, reading of the literature, preparation and delivery of presentation, situation modelling, group discussion, the writing of patient's case history	Presentation. Written exam test will be given at the end of the course
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Topics	Contact work hours							Time and tasks of self-study	
	Lectures	Consultations	Seminars	Practice	Laboratory work	Practical training	Total contact hours	Self-education	Tasks
Anaesthesiology and reanimathology									
1 Physiology of pain and related pharmacology.			1	1			2	1	Get acquainted with the literature about the physiology of pain and related pharmacology.
2 Safe anesthesia and intensive care principles. Evaluation of the patient before anaesthesia, risk assessment, preparation for anaesthesia	1		1	1			3	2	Get acquainted with the literature about the risk assessment of anaesthesia and surgery, also preparation for anaesthesia.
3 Inhalational anaesthesia. Airway management. Intubation of trachea.			2	1			3	2	Get acquainted with the literature about the pharmacokinetics and pharmacodynamics of inhalation agents, and their choice, about the assessment of airways, intubation of trachea and other methods of airway management. Learn the algorithm of difficult airways.
4 Non-inhalational anaesthesia. Muscle relaxants.			1	1			2	3	Get acquainted with the literature about the pharmacokinetics and pharmacodynamics of medications deployed for non-inhalational anaesthesia, also their choices.
5 Monitoring during anaesthesia and critical illness.	1			1			2	3	Get acquainted with the literature about the principles of patient monitoring during anaesthesia and in the ICU.
6 Local and regional anaesthesia.			1	1			2	3	Get acquainted with the literature about the principles of local and regional anaesthesia, also the related complications.

7 Complications of anaesthesia.	2					2	2	Get acquainted with the literature about the diagnosis and management of complications in anaesthesia.
8 Basic life support (BLS)..	1			1		2	2	Get acquainted with the literature about the BLS and work with the simulation mannequins.
9 Advanced life support (ALS)	1			1		2	3	Get acquainted with the literature about the BLS and ALS, and work with the simulation mannequins.
10 Treatment of patients after resuscitation.			1	1		2	2	Get acquainted with the literature about treatment of patients in the ICU after resuscitation.
11 Resuscitation in emergencies.			1			1	2	Get acquainted with the literature about the resuscitation and work with the simulation mannequins. Learn the principles of life support in emergencies.
12 Basics of infusion therapy, homeostasis. Electrolyte disbalance, metabolic control. Acid-base balance disorders.			2	1		3	2	Get acquainted with the literature about basics of homeostasis correction.
13 Acute respiratory failure basics of diagnostics and management.			1	1		2	2	Get acquainted with the literature about acute respiratory failure.
14 Shock, diagnosis and treatment.	2		1			3	2	Get acquainted with the literature and shock of various ethiology.
15 Sepsis, diagnosis and treatment.			1	1		2	2	Get acquainted with the literature about sepsis, diagnosis and treatment.
Total	8		13	12		33	33	
General surgery								
1. Definition of surgery. Content of general surgery. History of surgery and surgical education worldwide and in Lithuania. Ethics. Deontology in surgical clinic. Legal aspects.	2					2		To perform a review of history of surgery and surgical education worldwide and in Lithuania before the practise course.
2. Antiseptic, aseptic. Operating theatre and surgical ward. Sterilization, disinfection.				2		2	2	To perform a review of key things related with antiseptics and aseptics before the practise training. To observe the process of clean wound dressing.
3. Surgical risks. Operation: indications, arrangements, stages, response of host. Surgical stitches, drains, tubes, catheters, dressings, instruments. Surgical wound and it's healing, prevention of infection.	2			2		4	2	To gain theoretical knowledge before the practise about preparation of the patient for surgery. To observe operations in the theatre.
4. Preoperative period. Preoperative assessment of the patient. Syndromes in surgery: acute abdomen, bowel obstruction, mechanical jaundice,			6	2		8	8	Independent review of the topic related literature before the practise course. To observe objective investigations.

bleeding in the digestive tract.									
5. Surgical infection. Intoxication. Abscess, cellulitis. Principles of diagnostics and treament.	2			2			4	2	Independent review of the topic related literature before the practise course.
6. Infections of closed cavities of the body. Sepsis. Septic shock. Principles of treatment. Erysipelas. Tetanus. Rabies. Principles of antibacterial therapy. Nursing of surgical patient.			3				3	2	Independent review of the topic related literature before the practise course. To observe the process of infected wound dressing.
7. Assessment of trauma patient with multiple or single system injuries. ATLS.			2				2	3	Independent review of the topic related literature before the practise. First aid, BLS, ATLS.
8. Wounds: classification, first care, treatment, healing. External hemorrhage and hemostasis. Thermic injuries.				2			2	2	Independent review of the topic related literature before the practise. Bandaging.
9. Postoperative period, management of the patient, complications and it’s prevention. Postoperative recovery and rehabilitation. Homeostasis, fluid and electrolyte management in surgical patient. Clinical nutrition in surgical patient.	2			2			4	2	Independent review of the topic related literature with the emphasis to classification of postoperative complications before the practise.
10. Basics of oncology. Specific considerations: general surgery, abdominal surgery, oncologic surgery, metabolic surgery, surgery of thermic injuries, angio- and thoracic surgery, plastic and reconstructive surgery, orthopaedic surgery, urology, gynecolog, neurosurgery, transplantology.			2				2		Independent review of the topic related literature with the emphasis to TNM staging before the practise.
11. Patient’s case history								11	To write an academical observed patient's case history
Total	8		13	12			33	34	
TOTAL	16		26	24			66	67	

Assessment strategy	Weight (%)	Assessment period	Assessment criteria
Anaesthesiology and reanimathology			
Examination	100 %	At the end of the practical training according to the schedule	The test is composed of 60 questions (of different complexity, from understanding to assessment). The assessment is as follows: 10 (Excellent): Excellent performance, outstanding knowledge and skills. 95-100 % correct answers. 9 (Very good): Strong performance, good knowledge and skills 85-94 % correct answers. 8 (Good): Above the average performance, knowledge and skills 75-84 % correct answers. 7 (Highly satisfactory): Average performance, knowledge and skills with unessential shortcomings 65-74 % correct answers. 6 (Satisfactory): Below average performance, knowledge and skills with substantial shortcomings. 55-64 % correct answers. 5 (Sufficient): Knowledge and skills meet minimum criteria. 45-54 % correct answers.

			4, 3, 2, 1 (Insufficient): Knowledge and skills do not meet minimum criteria/below minimum criteria. 0-44 % correct answers. Failed.
General surgery			
Practical seminars will be held in auditorium, operating room, surgical department, operations simulation auditorium. Test during practical works.	20%	During practical works course	<p>The student should be able to:</p> <ul style="list-style-type: none"> - make the anamnesis of the patient before the operation, perform physical examination, interpret laboratory and other tests and summarize all the gathered information; - to propose reasonable method of the operation and to make the preoperative preparation and postoperative observation plan; - to evaluate vital functions (circulatory, respiration and etc.) for the patients after the operation, to transport the patients and to look after them; - to know the devices and instruments used during the operations. - to know how to apply antiseptics and aseptics skills in surgical department. <p>The test is made from 10 open and closed type of questions (of different difficulty, from understanding to evaluation), every question is rated by 1 point. The evaluation is:</p> <p>10: Excellent. Correct answers to all (10) questions</p> <p>9: Very good. Correct answers to 9 questions</p> <p>8: Good. Not essential mistakes. Correct answers to 8 questions</p> <p>7: Moderate. There are mistakes. Correct answers to 7-6 questions</p> <p>6: Satisfactory. There are major mistakes. Correct answers to 5 questions</p> <p>5: Poor. Multiple mistakes, but minimal demands are satisfied. Correct answers to 4-3 questions.</p> <p>4-1: Unsatisfactory. but satisfies minimal requirements. Correct answers to 1-2 questions.</p>
An academical observed patient's case history	20%	Until the last practical works occupation day	<p>The structure of written work, the fullness, logicity and rightness of given information is evaluated.</p> <p>The evaluation is:</p> <p>10: Excellent.</p> <p>9: Very good.</p> <p>8: Good. Not essential mistakes.</p> <p>7: Moderate. There are mistakes.</p> <p>6: Satisfactory. Essential mistakes.</p> <p>5: Poor. Multiple mistakes, but satisfies minimal requirements.</p> <p>4-1: Unsatisfactory. Minimal demands are not satisfied.</p>
Examination: At the end of the practical training according to the schedule	60 %	September-January	<p>The test is composed of 100 questions (of different complexity, from understanding to assessment). The assessment is as follows:</p> <p>10 (Excellent): Excellent performance, outstanding</p>

			<p>knowledge and skills. 95-100 % correct answers.</p> <p>9 (Very good): Strong performance, good knowledge and skills 85-94 % correct answers.</p> <p>8 (Good): Above the average performance, knowledge and skills 75-84 % correct answers.</p> <p>7 (Highly satisfactory): Average performance, knowledge and skills with unessential shortcomings 65-74 % correct answers.</p> <p>6 (Satisfactory): Below average performance, knowledge and skills with substantial shortcomings. 55-64 % correct answers.</p> <p>5 (Sufficient): Knowledge and skills meet minimum criteria. 45-54 % correct answers.</p> <p>4, 3, 2, 1 (Insufficient): Knowledge and skills do not meet minimum criteria/below minimum criteria. 0-44 % correct answers. Failed.</p>
Anaesthesiology and reanimathology; General surgery general grade			The final grade consists of the Anaesthesiology and Reanimatology course part of the 50 percent examination grade and the General Surgery part of the 50 percent assessment grade.

Author	Year of publication	Title	No of periodical or vol. of publication	Publication place and publisher or Internet link
Required reading				
Manuel C. Pardo	2023	Miller's Basics of Anesthesia		Elsevier Saunders
European Resuscitation Council	2021	Resuscitation guidelines		https://cprguidelines.eu/
Townsend C. Jr. et al.	2012	Sabiston Textbook of Surgery, 19th ed.	-	Saunders, Elsevier
Brunicardi F. et al.	2019	Schwartz's Principles of Surgery, 11th ed.	-	The McGraw-Hill Companies, Inc. http://accessmedicine.mhmedical.com/book.aspx?bookID=980
Evans L. et al.	2021	Surviving sepsis campaign: international guidelines for management of sepsis and septic shock 2021		https://pubmed.ncbi.nlm.nih.gov/34599691/ <i>Intensive Care Med</i> (2021) 47:1181–1247
J Hall, G Schmidt, J Kress	2015	Principles of Critical Care. Chapter 33. Shock		McGraw-Hill Education / Medical; 4th edition
Recommended reading				
American College of Surgeons	2004	Advanced Trauma Life Support, ATLS	-	ACS, Chicago, USA
American College of Surgeons	2018	Advanced Trauma Life Support, ATLS – student course manual		ACS, Chicago, USA
Tom Peck, Benjamin Harris	2021	Pharmacology for Anaesthesia and Intensive Care		Cambridge University Press.
Joseph Varon	2021	Handbook of Critical Care Medicine		Springer
Ortiz-Ruiz, Guillermo, Dueñas-Castell, Carmelo	2018	Sepsis		Springer