Name of the Course	**Anesthesiology and Intensive Medicine**			***Code***	MSE408
Type of study program:	Integrated university study program, Medicine			***Year of study:***	4
Credits (ECTS):	5.0	***Semester:***	VIII	***Number of hours per semester (l+s+e)***	60 (20+0+40)
Status of the course:	obligatory	***Preconditions:***	Passed 3rd year exams	***Comparative conditions:***	/
Access to course:	Fourth year students			***Hours of Instructions:***	According to schedule

Course Teacher:	Assistant Professor Mirko Mihalj, MD, PhD
Consultations:	As agreed with students
E-mail address and phone number:	mirko.mihalj@mef.sum.ba; +38763694351
Associate Teachers:	Boris Matić, MD Dajana Vladić Spajić, MD Luka Vrdoljak, MD Manja Spahalić,MD Mateo Perić; MD Ivana Bošnjak, MD
Consultations:	As agreed with students
E-mail address and phone number:	/
The Aims of the Course:	The aims of the course are: To provide students with theoretical and practical knowledge about regional and general anesthesia, and resuscitation of critically ill patients.
Learning Outcomes (general and specific competencies):	● Applying the skills of critical thinking in scientific attitude ● Synthesis of knowledge of human physiology and pathophysiology, pharmacology, and cutting edge technology quickly and thoroughly to provide safe and compassionate care to all patients ● Remembering and understanding the importance of ability to work with others (teamwork skills) but also personal characteristic of successful health care professional needed in treatment of all patients (empathy, motivation, communication, honesty, integrity and ethical awareness) ● Applying valuable knowledge and skills gained in diagnosis and treatment of patients in need of emergent resuscitation (airway, breathing, and circulation) ● Understanding how medical knowledge in addition to modern anesthetic and perioperative care can effect positive outcomes for patients undergoing surgery ● Understanding the signs of sudden cardiac arrest ● Applying the basic and advanced measures of cardiopulmonary resuscitation (CPR) ● Applying the basic and advanced principles of airway management ● Understanding the basic principles and techniques of general and regional anesthesia, including risks and benefits of various techniques ● Remembering the specific agents used for induction and maintenance of anesthesia and analyzing their advantages and disadvantages (IV agents, inhalational agents, neuromuscular blocking agents) ● Understanding the monitoring techniques both non-invasive (EKG, BP, Pulse Oximetry) and invasive ● Understanding the management of critically ill patients (CPR, IV fluid resuscitation, and mechanical ventilation) ● Evaluating and analyzing the management of issues unique to critically ill patients including different types of shock, techniques of invasive monitoring, hemodynamic and respiratory support, airway management, basic cardiovascular, pulmonary, renal physiology and pharmacology ● Understanding etiology, pathophysiology, symptomatology and treatment of shock ● Applying the practical skills on medical simulation mannequins (start IVs, intubation techniques, nasogastric tube insertion, urethral catheterization etc.) ● Analyzing and understanding complications of regional and general anesthesia, and propose treatment options

	● Familiarization with Chronic Pain and treatment options Learning outcomes will be evaluated and contribute to student's final grade.
Course Content:	The course consists of lectures and exercises during period of 3 weeks.

Format of Instruction (mark in bold)	**Lectures**	**Exercises (practicals)**	**Seminars**	Independent assignments
	Consultations	Work with mentor	Field work	Other
	Remarks:			
Student responsibilities	Class Attendance, excused absences may not exceed 20% of the class meetings.			
Screening student work (mark in bold)	**Class attendance**	**Class participation**	Seminar essay	**Practical training**
	Oral exam	**Written exam**	Continuous assessment	Essay

Detailed evaluation within a European system of points

STUDENT RESPONBILITIES	**HOURS**	**PROPOTIONS OF ECTS CREDITS**	**PROPORTIONS OF GRADE**
Class Attendance and Participation	60	2	0%
Written exam	30	1	50%
Practical exam	15	0.5	0%
Oral exam	45	1.5	50%
Total	**150**	**5**	**100%**

Further clarification:

The written and practical exam in Anesthesiology and Intensive medicine is mandatory and qualifying for the oral exam. To pass the exam (grade sufficient), the student must answer 55% of the questions correctly. The practical exam consists of patient examination and applying knowledge for anesthesia induction and airway management. The oral part of the exam consists of four different areas: 1. practical anesthesiology (airway management, iv access, basic monitoring), 2. Intensive medicine (recognition and management of shock, basic principles of mechanical ventilation, fluid management, brain death), 3. CPR algorithm (applying BLS and ALS, post resuscitation care), 4. Fundamentals of anesthesia and Chronic Pain therapy (agents explained and used in anesthesiology, preoperative assessment, chronic pain therapy).

The final assessment is carried out according to the Regulation of Studies of their University of Mostar and applies to all study groups. According to the Regulations on studying final grade is obtained as follows:
A = 91-100% 5
B = 79 to 90% 4
C = 67 to 78% 3
D = 55 to 66% 2
F = 0 to 54% 1

The final grade is the average of the written and oral exam grades.

Required literature:	1. Morgan & Mikhail's Clinical Anesthesiology, 7ed John F. Butterworth IV, David C. Mackey, John D. Wasnick, 2022 2. Handouts and teaching materials
Optional literature:	1. Textbook of Critical Care 7th edition by Jean-Louis Vincent MD PhD, Frederick A. Moore MD MCCM, 2017. 2. European Resuscitation Council Guidelines for Resuscitation.
Additional Information about the course:	Monitoring methods of teaching quality: - student questionnaire - quality analysis by students and teachers - exam results analysis - report of the office for teaching quality - external evaluation (visit of team for quality control)

Annexes: calendar classes

The number of teaching units	Topics and Literature
I.	Title: Basic Life Support
	Short description: Familiarization with the basics of resuscitation
	Literature: Required and optional
II.	Title: Algorithm of Advanced Life Support
	Short Description: Familiarization with expanded resuscitation measures
	Literature: Required and optional
III.	Title: Pediatric Basic Life Support and Resuscitation of Newborn
	Short description: Familiarization with reanimation of children and newborns
	Literature: Required and optional
IV.	Title: Complications of CPR
	Short description: Familiarization with reanimation complications
	Literature: Required and optional
V.	Title: Post resuscitation care
	Short description: Familiarization with post-reanimation problems
	Literature: Required and optional
VI.	Title: Intravenous Anesthetics
	Short description: Familiarization with pharmacodynamics and pharmacokinetics of intravenous anesthetics
	Literature: Required and optional
VII.	Title: Inhalational Anesthetics
	Short description: Familiarization with pharmacodynamics and pharmacokinetics of inhalation anesthetics
	Literature: Required and optional
VIII.	Title: Other pharmacological agents in anesthesiology
	Short description: Familiarization with medicines used in anesthesiology
	Literature: Required and optional
IX.	Title: Local anesthetics and Regional Anesthesia
	Short description: Application of regional anesthesia
	Literature: Required and optional
X.	Title: Anesthetic Monitoring
	Short description: Familiarization with the basics of patient monitoring in anesthesia
	Literature: Required and optional
XI.	Title: Airway Management
	Short description: Familiarization with airway management of patients in general anesthesia and Critical Care Unit
	Literature: Required and optional
XII.	Title: Establishing vascular access
	Short description: Familiarization with various ways of obtaining vascular access
	Literature: Required and optional
XIII.	Title: Preoperative assessment of patients
	Short description: Familiarization with preoperative assessment of patients scheduled for surgeries under General/Regional Anesthesia
	Literature: Required and optional
XIV.	Title: Basic principles of Mechanical Ventilation
	Short description: Familiarization with basic principles, types and modes of Mechanical Ventilation
	Literature: Required and optional
XV.	Title: Brain Death
	Short description: Determining death
	Literature: Required and optional
XVI.	Title: Fluid management and Blood Component Therapy
	Short description: Familiarization with evaluation of Intravascular Volume, types of i.v. Solutions (crystalloids, colloids) and Blood Components used in Anesthesia and Intensive Care practice.
	Literature: Required and optional
XVII.	Title: Anaphylaxis
	Short description: Recognition, diagnosis and treatment of anaphylaxis

	Literature: Required and optional
XVIII.	Title: Shock
	Short description: Familiarization with the types of shock and therapy
	Literature: Required and optional
XIX.	Title: Chronic Pain Therapy
	Short description: Familiarization with Chronic Pain and treatment options
	Literature: Required and optional