**SYLLABUS**

**concerning the cycle of education 2022-2028**

Academic year **2023/2024**

1. 1. **BASIC INFORMATION CONCERNING THIS SUBJECT / MODULE**

|  |  |
| --- | --- |
| Subject / Module | **Anaesthesiology and Intensive Therapy**  |
| Course code / module \* | AIT/F |
| Faculty of (name of the leading direction) | **College of Medical Sciences, University of Rzeszów** |
| Department Name | **College of Medical Sciences, University of Rzeszów** |
| Field of study | **Medicine**  |
| Level of education | **uniform master's studies** |
| Profile | **general academic** |
| Form of study | **stationary**  |
| Year and semester | **year V, semesters IX and X**  |
| Type of course | **obligatory** |
| Coordinator |  |
| First and Last Name of the Teacher |   |

\* *-*- According to the resolutions of the Faculty of Medicine

1.1. **Forms of classes, number of hours and ECTS**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Semester | Lecture | Exercise  | Conversation | Laboratory | Seminar | ZP | Aprentice-ship | Self-learning | **Number of points ECTS** |
| IX | 15 | 20 | - | - | - | - | - | - | 2 |
| X | 15 | 20 | - | - | - | - | - | - | 2 |

**1.3.  The form of class activities**

☒ classes are in the traditional form

☒ classes are implemented using methods and techniques of distance learning

**1.4. Examination Forms / module** (**exam**, **credit with grade** or credit without grade)

**2. REQUIREMENTS**

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| completed and passed courses: anatomy and physiology of the respiratory, circulatory and renal system COMPLETED COURSES IN INTERNAL MEDICINE, PAEDIATRICS, SURGERY AND EMERGENCY MEDICINE(iii AND iv YEAR)  |

3. Goals, Learning Outcomes , Study Content , Teaching Methods

3.1 Goals

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| --- | --- |
| C1 | Introduction to the basics of the subject Anesthesiology and Intensive Care, in particular: - principle of perioperative safety, preparing the patient for surgery, performing general anesthesia, local anesthesia and controlled sedation. |
| C2 | Acquainting with current guidelines of management of life-threatening states in adult. |
| C3 | Making students aware of the need to systematically supplement and update their knowledge in this area. Acquaintance with the principles of cooperation in a group and taking responsibility for timely and reliable performance entrusted tasks. |
| C4 | Introduction into the intensive care issues |

**3.2 Learning outcomes**

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| --- | --- | --- |
| **EK** (the effect of education) | The content of the learning effect defined for the subject (module) | Reference to directional effects (KEK) |
| **Student knows and understands**  |  |
| K\_W01 | symptoms and course of diseases | O.W2 |
| K\_W02 | methods of diagnostic and therapeutic procedures appropriate for specific disease states | O.W3 |
| K\_W03 | principles of perioperative safety, patient preparation for surgery, general and local anesthesia and controlled sedation | F.W4 |
| K\_W04 | postoperative treatment with analgesic therapy and postoperative monitoring | F.W5 |
| K\_W05 | indications and rules for the use of intensive care | F.W6 |
| K\_W06 | rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures, rules of their performance and the most frequent complications | F.W3 |
| K\_W07 | the most common complications associated with anesthesia, sedation and perioperative period | F.W19 |
| K\_W08 | the principles of suspicion and diagnosis of brain death | F.W15 |
| K\_W09 | Therapeutic algorithm for hypothermia  | F.W16 |
| **Skills – Student can** |  |
| K \_U1 | identify medical problems and prioritize medical management  | O.U1 |
| K \_U2 | identify life-threatening conditions that require immediate medical intervention | O.U2 |
| K\_U3 | plan the diagnostic procedure and interpret its results | O.U3 |
| K\_U4 | implement appropriate and safe therapeutic treatment and predict its effects | O.U4 |
| K\_U5 | plan own learning activities and constantly learn in order to update own knowledge | O.U5 |
| K\_U6 | communicate with the patient and his family in an atmosphere of trust, taking into account the needs of the patient | O.U7 |
| K\_U7 | communicate and share knowledge with colleagues in a team | O.U8 |
| K\_U8 | critically evaluate the results of scientific research and adequately justify the position | O.U9 |
| K\_U9 | monitor the patient's condition in the post-operative period based on basic vital parameters | F.U12 |
| K\_U10 | to pass on information about the death of a close friend and relative | F.U36 |
| **Social Competences – Student is ready to**  |  |
| K \_K1 | establish and maintain deep and respectful contact with patients and to show understanding for differences in world views and cultures | O.K1 |
| K \_K2 | be guided by the well-being of a patient | O.K2 |
| K\_K3 | respect medical confidentiality and patients' rights | O.K3 |
| K\_K4 | take actions towards the patient on the basis of ethical norms and principles, with an awareness of the social determinants and limitations of the disease | O.K4 |
| K\_K5 | perceive and recognize own limitations and self-assessing educational deficits and needs | O.K5 |
| K\_K6 | use objective sources of information | O.K6 |

**3.3 Study content**

1. Lectures

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| **Course contents** |
| 1. Evaluation of the patient and preoperative medication.
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| 1. General anesthesia.Recovery from anesthesia. Complications.
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| 1. Anaesthesia of elderly patients.
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| 1. Anaesthesia for children.
 |
| 1. Regional anaesthesia .
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| 1. Obstetric anesthesia and pain relief in labor.
 |
| 1. Pain management and sedation in ICU patients. Drugs in ICU patients ( pharmacokinetics, pharmacodynamics).
 |
| 1. Critical care in neurology and neurosurgery.Seizures. Evaluation of the comatose patient. Brain death.
 |
| 1. Infections in surgical ICU-preventions, laboratory diagnosis, monitoringBacteriemia and sepsis. Toxic and septic shock. Bacterial hospital-aquired pneumonia and VAP. Long term catheters, venous, artery lines.Infections in surgical patients-preventions, laboratory diagnosis, monitoring-related bacteremia and sepsis.Antibiotic prophylaxis in surgical theatres
 |
| 1. Respiratory failure. Principles of mechanical ventilation.
 |
| 1. Cardiovascular management in CCU-diagnosis, monitoring and treatment.Diagnosis and treatment of the shock syndrome.
 |
| 1. Metabolism in critical patient. Dehydratations and electrolities supply. Nutritional failure, principles of parenteral nutrition and enteral feeding.
 |
| 1. . Massive bleeding and haemorrhagic shock
 |
| 1. ICU patient after Severe trauma. Acute kidney failure.
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1. Clinical courses (exercises)

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| Course contents |
| 1. Problem-based learning: preparation for anaesthesia. Preoperative visit
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| 1. Problem-based learning: general anaesthesia. Patient evaluation in the postoperative period. Postoperative pain relief. Risk factors in the postoperative period: residual muscle paralysis, respiratory depression, delirium.
 |
| 1. Problem-based learning: regional anaesthesia. Spinal and epidural blocks. Peripheral nerve blocks. Complications of regional anesthesia
 |
| 1. Problem-based learning: pain relief in labor.
 |
| 1. Problem-based learning: respiratory failure. Mechanical lung ventilation.
 |
| 1. Problem-based learning: acute heart failure. Monitoring of the cardiovascular function. Cardiac output. Catecholamine administration.
 |
| 1. Problem-based learning: acute renal failure and renal support.
 |
| 1. Problem-based learning. Infections in the ICU setting
 |
| 1. Medical Simulation Center 1: Anaesthesiology. Preparing the patient for general anaesthesia. IV placement. Anaesthesia machine. Monitoring of vital signs: ECG, non-invasive and invasive blood pressure, central venous pressure, monitoring of cardiac output, muscle relaxation. Induction of anaesthesia. Preoxygenation – the concept of apnoea tolerance period. Securing the airway: mask ventilation, oral airway, laryngeal mask, endotracheal intubation. Placing naso-gastric tube. Placing urinary catheter. Maintenance of anaesthesia: evaluating the depth of anaesthesia – BIS. Evaluation blood loss. Fluid and blood products.
 |
| 1. Medical Simulation Center 2. Intensive therapy. Scenario 1: Septic shock. Using quick-SOFA scale. Evaluation and treatment of the patient in septic shock in the ICU setting. Administering drugs using infusion pump. Cardiopulmonary resuscitation. Scenario B. Traumatic brain injury and massive internal bleeding combined. Patient stabilization for abdominal surgery.
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3.4 Teaching Methods

Clinical classes, case study, high fidelity simulation, brainstorming, discussion/seminar. Group work

4. **METHODS AND EVALUATION CRITERIA**

4.1 Methods of verification of learning outcomes

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| Symbol efektu | Methods of assessment of learning outcomes (Eg.: tests, oral exams, written exams, project reports, observations during classes) | Form of classes |
| K\_W01 – KW10  | Test (written)  | Lectures, clinical classes (clinical classes)  |
| K\_U01 – KU10  | Practical pass (Summer semester, in the Medical Simulation Center) | Clinical classes (exercices)  |

4.2 Conditions for completing the course (evaluation criteria)

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| **Lectures (EK\_01, EK\_02):**1. test pass and open questions:A: Questions in the field of messages to remember;B: Questions in the field of speech to understand;C: Solving a typical written task;D: Solving an atypical written task;- for insufficient solution of tasks only from areas A and B = grade 2.0- for solving tasks only from areas A and B, the possibility of obtaining max. rating 3.0- for solving tasks from the area A + B + C, the possibility of obtaining max. evaluation 4.0- for the solution of tasks in the area A + B + C + D, the possibility of obtaining a rating of 5.0**Knowledge assessment:**Written test5.0 - has knowledge of each of the contents of education at the level of 90% -100%4.5 - has knowledge of each of the content of education at the level of 84% -89%4.0 - has knowledge of each of the content of education at the level of 77% -83%3.5 - has knowledge of each of the content of education at the level of 70% -76%3.0 - has knowledge of each of the content of education at the level of 60% -69%2.0 - has knowledge of each of the contents of education below 60%**Classes, seminars (K\_U1 – K\_U10, K\_K1-K\_K6):**1. full participation and activity in the exercisesRange of ratings: 2.0 - 5.0**Skill assessment**5.0 - the student actively participates in the classes, is well prepared, knows the rules of conduct very well and acquires basic and advanced skills of rescue4.5 - the student actively participates in classes, knows the rules of conduct well and has acquired basic and advanced rescue skills4.0 - the student actively participates in classes, is improved, knows the rules of conduct well and has acquired basic and advanced rescue skills3.5 - the student participates in the classes, his scope of preparation does not allow for a comprehensive presentation of the discussed problem, he knows the rules of conduct well enough and has acquired basic and advanced rescue skills3.0 - the student participates in the classes, knows the rules of conduct sufficiently and has acquired basic rescue skills2.0 - the student passively participates in the classes, the statements are incorrect in substance, do not know the rules of conduct and have not acquired the basic skills of rescue |

**5. Total student workload required to achieve the desired result in hours and ECTS credits**

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| --- | --- |
| **Activity Form**  | **Activity hours**  |
| Hours of classes according to plan with the teacher | 60 |
| Participation in the consultations (online?) | 3 |
| Preparation for classes | 2 |
| Preparation for the test  | 20 |
| Total of hours | 85 |
| **ECTS points**  | 4 |

*\* 1 ECTS point equals 25-30 hours of the student’s workload*

6. Apprenticeship

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| --- | --- |
| Number of hours | -0 |
| Rules and forms of apprenticeship | -0 |

7. References

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| Obligatory 1. Oh”s Intensive Care Manual Andrew D Bersten , Neil Soni, seventh edition  |
| Optional 1. Advanced Life Support – guidelines //www.erc.edu/index.php/als\_overview/p
2. **Morgan & Mikhail’s Clinical Anesthesiology, Seventh Edition**

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