**SYLLABUS**

**2017/2018**

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| **Name of a course/module** | **Anaesthesiology and Intensive Care** |
| **Faculty of**  | **Medicine with Division of Dentistry and Division of Medical Education in English** |
| **Name** **of a field of study** | Medicine |
| **Level of education** |  |
| **Form of study** |  |
| **Language of instruction** | English |
| **Type of course** | obligatory ◼ facultative □ |
| **Year of study/Semester** | I □ II □ III□ IV □ V ◼ VI □ | 1 □ 2 □ 3 □ 4 □ 5 □ 6 □ 7 □ 8 □ 9□ 10 ◼ 11 □ 12 □ |
| **Number of didactic hours of classes with division for forms of teaching** | 60 hours, 40 hours – classes, 20 hours - lectures |
| **Assumptions and aims of the course** | Student should obtain knowledge in the field of : preparing the patient to the anaesthesia and surgery, perioperative care of the patient, basics of intensive care, suspition and confirmation of brain death, principles and guidelines of cardiopulmonary resuscitation.Student should obtain practical skills in: peripheral vascular access, cardiopulmonary resuscitation with use of manual defibrillator and AED, giving first aid in most common situations, monitoring of the patient in perioperative period, assessment of unconscious patient according to commonly used scoring systems. Manual skills in following procedures: taking the temperature, pulse assessment, non-invasive blood pressure monitoring, monitoring vital signs with cardiomonitor and pulsoximeter, spirometric examination, passive oxygen therapy, orotracheal intubation, oropharyngeal tube insertion, bag with valve and mask ventilation, intravenous, intramuscular ad subcutaneous injections, obtaining arterial and venous blood for lab tests |

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| **Symbol of** **education outcomes in accordance with the standards** | **Description of directional effects of education** | **Methods of verification of achieved learning outcomes** |
|  | **Knowledge (according to the detailed education outcomes)** |  |
| F.W4 | Knows the principles of perioperative safety, preparing patient for operation, principles of general anaesthesia, regional anaesthesia and monitored anaesthetic care | Classes – creditMCQ Final Exam |
| F.W5 | Knows principles of postoperative care with postoperative pain management and postoperative bedside monitoring |
| F.W6 | Knows indications for intensive therapy and principles of intensive therapy |
| F.W7 | Knows guidelines for cardiopulmonary resuscitation in all age groups: newborn, children and adults |
| F.W15 | Knows principles of suspicion of brain death and its confirmation |
|  | **Skills (according to the detailed education outcomes)** |  |
| F.U 5  | Obtain vascular access | Performing particular procedures on manikins |
| F.U10 | Basic life support with AED resuscitation  |
| F.U11 | Acts according to Advanced Life Support Algorithm |
| F.U12 | Can monitor patient in postoperative course based on basic vital signs |
| F.U21 | Can assess the unconscious patient condition according to international scoring systems |
|  | Can perform medical procedures ie:1. Taking the temperature, pulse palpation and measurement, non-invasive blood pressure measurement
2. Monitoring vital signs with cardiomonitor and pulsoximeter
3. Spirometric measurements, oxygen therapy with passive oxygenation and supported and controlled mechanical ventilation
4. Introducing oropharyngeal tube
5. Intravenous, intramuscular and subcutaneous injections, obtaining peripheral venous blood and arterial blood for analyses
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|  | **Social competence (according to the general education outcomes)** |  |
| K1 | He /She recognizes his/her own diagnostic and therapeutic limitations, educational needs, planning of educational activity | **Continuous assessment by the teacher** |
| K2 | He /She is able to work in a team of professionals, in a multicultural and multinational environment |
| K3 | He /She implements the principles of professional camaraderie and cooperation with representatives of other professionals in the range of health care |
| K4 | He /She observes doctor-patient privilege; and patient rights |

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| **ECTS points** |  |
| **Student Workload** |
| **Form of Activity** | **Number of hours to complete the activity** |
| **Activities that require the participation of (academic) teacher** |
| 1. Realization of the course: lecture
 | 20 hours |
| 1. Realization on of the course: seminar
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| 1. Realization of the course: classes
 | 40 |
| 1. exam
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| 1. electives
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|  |  total of hours 60 |
| **Self-study:**  |
| 1. Preparation for classes
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| 1. Preparation for credits / tests
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| 1. Preparation for the exam / final test
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|  |  total of hours  |

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|  **Course contents** |
| **Topics** | **Form** *(lectures, classes etc.…)* |
| Introduction to the topic, history of anaesthesia and intensive care, preoperative visit, interpretation of laboratory and physiological tests results, premedication, risk of anaesthesia, informed consent for anaesthesia and surgery, ethical and legal problems in anaesthesia | Lecture |
| General anaesthesia. Particular techniques of anaesthesia: volatile anaesthesia, intravenous and volatile anaesthetic agents, analgetic agents and muscle relaxants. New techniques of anaesthesia – TIVA, TCA. Obligatory requirements in intraoperative moniotoring | Lecture |
| Regional anaesthesia – pharmacology of local anaesthetics. Peripheral regional anaesthesia of upper and lower extremities – indications, contraindications and possible complications. Regional intravenous anaesthesia | Lecture |
| Spinal and epidural anaesthesia – indications, contraindications, compllications. Combined spinal-epidural anaesthesia. Thoracic epidural anaesthesia in postoperative pain management | Lecture |
| Techniques in anaesthesia in particular medical specialties: obstetric anaesthesia, day – case surgery, analgosedation for diagnostic procedures. Early and late complications of anaesthesia. Postoperative care | Lecture |
| Cardiopulmonary resuscitation in adults, children and newborn according to European Resuscitation Council Guidelines 2010. Postresuscitation syndrome – diagnostic and therapeutic issues | Lecture |
| Principles of therapy in multiprofile intensive care unit – indications for admission, contraindications, standards of monitoring and equipment. Patients chart in ICU | Lecture |
| Acute respiratory failure – principles of passive oxygenation and mechanical ventilation. Modes of mechanical ventilation. Monitoring of mechanical ventilation and its effectiveness. Acute Respiratory Distress Syndrome (ARDS): pathogenesis, diagnosis, therapy | Lecture |
| Central veins and arteries cannulation. Indications, contraindications and complications. Principles of nutritional therapy in ICU. Parenteral and enteral nutrition. Monitoring of effect of nutrition | Lecture |
| Sepsis, severe sepsis, septic shock and Multiple Organ Failure as the diagnostic and therapeutic problem in ICU. Hospital infections | Lecture |
| Brain death – sign and symptoms. Confirmation of brain death. Principles of care after organ donor. Selected issues in transplantology. Ethical issues in intensive care | Lecture |
| Acute and chronic pain – principles of therapy, techniques and drugs | Lecture |
| Fluid therapy – water and electrolyte balance. Blood and blood derivatives therapy. New methods of cardiac output monitoring.  | Classes |
| Oxygen balance – oxygen delivery and oxygen uptake in physiology and pathology. Arterial blood gases – interpretation and correction. Oxygen therapy and oxygen toxicity. Side effects of mechanical ventilation | Classes |
| Shock, definition, classification, symptoms and principles of therapy. Pharmacological support in shock. Pulmonary artery catheter in shock monitoring and therapy, indications, contraindications and limitations. | Classes |
| Sepsis – symptoms, diagnosis and therapy. Severe sepsis and septic shock. Acute renal failure and renal replacement therapy in ICU. Multiple Organ Dysfunction Syndrome in ICU. Using scoring systems for ICU patient assessment.  | Classes |
| Infections in ICU. Hospital Acquired Pneumonia. Ventilator Associated Pneumonia. Urinary tract infections. Blood born infections. Surgical Site Infections. Principles of microbiological diagnostics in ICU. Prevention of hospital infections. Analgesia and sedation in ICU  | Classes |
| Clinical cases most commonly seen in ICU – bedside monitoring and therapy. Practical training in ICU procedures (mechanical ventilation, invasive procedures) | Classes |
| Practical training in operation room – different types of anaesthesia | Classes |
| Practical training in operation room in Cardiac Surgery Unit – postoperative monitoring after cardiac surgery | Classes |
| Basic Life Support – practical training with manikins and AED | Classes |
| Advanced Life Support – practical training with manikins - endotracheal intubation, manual defibrillation | Classes |

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| **A list of recommended and optional books** |
| **Obligatory reading:** 1. Gwinnutt CL, Gwinnutt M. Lecture Notes: Clinical Anaesthesia, 5th ed. Wiley Blackwell; 2016
2. Marino PL. The ICU Book 4th ed. Wolters Kluwer; 2013
3. European Resuscitation Council Guidelines for Resuscitation 2015. www.erc.org

**Additional reading:** 1. Smith T, Pinnock C, Lin T, Jones R. Fundamentals of Anaesthesia 4th ed., Cambridge University Press, 2016
2. Aitkenhead AR, Smith G, Rowbotham DJ. Textbook of Anaesthesia. 6th ed. Churchill Livingstone; 2013
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| **Conditions for receiving credit** |
| The absolute necessary for receiving credit is credit for all classes during the course. Absence during classes, if justified with sick leave or other serious condition, may be accepted after personal training with particular teacher. |
| Date of issue**:** | *15.10.2017* | Course coordinator or the head of the department where the course is held | *Juliusz Kosel, MD, PhD* |