

SUBJECT CARD

Faculty of Medicine and Health Sciences

Field of studies: Medicine

Form of studies: Full-time

Degree: long-cycle Master's program

Specializations: No specialization

Academic year: 2022/2023

EMERGENCY MEDICINE	
SUBJECT	Emergency medicine
NUMBER OF ECTS POINTS	3
LANGUAGE OF INSTRUCTION	English
TEACHER(S)	Bartosz Cetera, MD Łukasz Litwa, MD Łukasz Haber, MSc
PERSON RESPONSIBLE	Joanna Sowizdraniuk, MD, PhD
NUMBER OF HOURS	
LECTURES	15 h
CLASSES	42 h
GENERAL OBJECTIVES	
OBJECTIVE 1	Students will acquire knowledge and skills in dealing with patients in various age groups in a state of sudden health threat of internal origin and caused by injury.
OBJECTIVE 2	Students will acquire competences in the field of communication and cooperation in a resuscitation team in conditions of simulated medical scenarios.
LEARNING OUTCOMES	
MK1	Knowledge: Student knows the principles of operation of the integrated system of National Emergency Medical Service. (F.W8.)
MK2	Knowledge: Student knows the current guidelines for cardiopulmonary resuscitation (CPR) of new-borns, children and adults. (F.W7.)

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MS1	<p>Skills: Student follows the current algorithm of Advanced Life Support (ALS). (F.U11.)</p> <p>Student is able to:</p> <ol style="list-style-type: none"> 1) perform a physical examination of a patient in life-threatening condition of internal origin and resulting from an injury; 2) implement an adequate emergency procedure algorithm. <p>In particular, the student is able to:</p> <ol style="list-style-type: none"> 1) perform an ABCDE assessment on an adult, physical examination of a child in life-threatening condition and a rapid trauma assessment; 2) perform basic and advanced airway management: oral-pharyngeal tube, nasal-pharyngeal tube, laryngeal tube, laryngeal mask, endotracheal intubation through the mouth, emergency cricothyrotomy; 3) secure IV and IO access; 4) immobilize a trauma patient with the use of a cervical collar and spinal board; 5) lead a resuscitation team based on the current guidelines of the European Resuscitation Council (ERC) for the newborns, children of various age groups and adults.
MS2	<p>Skills: The student communicates with the team members by providing constructive feedback and support. (D.U11.)</p>
MS3	<p>Skills: The student recognizes his own limitations, makes a self-assessment of deficits and educational needs, plans his own educational activity. (D.U16.)</p>

INTRODUCTORY REQUIREMENTS

The student has the ability to interpret the ECG record and has knowledge of the mechanisms of action, indications, contraindications and dosage of drugs used in health emergencies. The condition for participation in the classes is the ability to provide first aid.

COURSE PROGRAM

DETAILED DESCRIPTION OF THE TOPIC BLOCKS

LECTURE 1	Organization and legal framework of the healthcare system for patients in a state of health emergency in Poland.
LECTURE 2	System of in-hospital medical segregation of patients in a state of emergency.
LECTURE 3	Adult cardiac arrest - Advanced Life Support algorithm according to the guidelines of the European Resuscitation Council 2015, including special circumstances.

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LECTURE 4	Dealing with life-threatening tachycardia and bradycardia in adults based on the guidelines of the European Resuscitation Council 2015 (including the procedure of synchronised cardioversion and transcutaneous pacing).
LECTURE 5	Trauma assessment of the patient in the pre-hospital setting according to ITLS standards and emergency procedures in the case of head, chest, abdomen and locomotor injuries.
LECTURE 6	Disaster medicine - organization of rescue operations in the case of mass casualty incidents and natural disasters.
LECTURE 7	Diagnosis and examination of a child in a state of emergency in accordance with the guidelines of the European Resuscitation Council.
LECTURE 8	Algorithm of advanced resuscitation procedures in a newborn after birth according to the guidelines of the European Resuscitation Council 2015.
LECTURE 9	Cardiac arrest in children - algorithm of advanced life support procedures according to the guidelines of the European Resuscitation Council 2015.
LECTURE 10	Dealing with life-threatening bradycardia and tachycardia in children based on the guidelines of the European Resuscitation Council 2015.
CLASS 1	<p>Classes in Medical Simulation Center (CSM): Consolidation of the examination of an adult patient in a state of health emergency, according to the ABCDE scheme. Acquiring the ability to perform basic airway management (head tilt – chin lift and jaw thrust manoeuvres, recovery position).</p> <p>Use of basic and advanced airway devices: oral-pharyngeal tube, nasal-pharyngeal tube, laryngeal tube, laryngeal mask airway. The use of various oxygen delivery methods and the ability to conduct assisted ventilation with the use of a BVM device.</p>
CLASS 2	<p>Classes in Medical Simulation Center (CSM): Performing the procedure of manual defibrillation, electrical cardioversion and transcutaneous pacing. Discussion of the current guidelines of the European Resuscitation Council for the management of life-threatening tachycardia and bradycardia.</p>
CLASS 3	<p>Classes in Medical Simulation Center (CSM): Universal algorithm for the treatment of cardiac arrest in adults according to the current guidelines of the European Resuscitation Council and selected specific situations.</p>

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CLASS 4	Classes in Medical Simulation Center (CSM): Oral endotracheal intubation, needle cricothyrotomy, intraosseous needle insertion . Improving the skills of conducting advanced life support procedures in adults - leading the resuscitation team, cooperation and communication in the resuscitation team.
CLASS 5	Classes in Medical Simulation Center (CSM): Dealing with an adult patient in a state of health emergency - improving the skills of examining a patient and implementing appropriate emergency procedures. Clinical scenarios in simulated conditions integrating the acquired knowledge and skills.
CLASS 6	Classes in Medical Simulation Center (CSM): Examination of a child in a state of health emergency. Algorithm for the treatment of cardiac arrest in children - advanced life support in children of different age groups. Supporting the adaptation of the newborn to ectopic life and cardiopulmonary resuscitation of the newborn immediately after birth.
CLASS 7	Classes in Medical Simulation Center (CSM): Primary and secondary trauma survey in pre-hospital setting according to the applicable guidelines of International Life Trauma Support, immobilization with the use of a cervical collar, spinal board and a vacuum mattress.
CLASS 8	Classes in Hospital Emergency Department (SOR): Collecting medical history, performing medical examination of the patient and determining the triage priority, performing an ECG, gaining peripheral IV access, interpretation of the laboratory tests results and imaging tests, work with medical records, case study.
DIDACTIC METHODS (APPLIED)	
	Information lecture; Conversational lecture; Discussion; Demonstration; Case studies; Brainstorm; Medical simulation of low and intermediate fidelity; Classes at the bedside of the patient; E-learning.
STUDENTS WORKLOAD	
NUMBER OF HOURS UNDER SUPERVISION	57 hours
NUMBER OF PREPERATION HOURS	Preparation for classes: 32 hours Preparation for the exam: 18 hours

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**TOTAL NUMBER OF HOURS
FOR THE COURSE**

107 hours

CONDITIONS FOR COURSE COMPLETION

1. Students' participation in lectures is obligatory.
2. Participation in the classes is obligatory for every Student. In this case, 100% attendance is required. In case of absence - before the end of the semester, participation in classes on the missed topic with another group is required.
3. If the required attendance is not completed in the first term of the examination session, the Student receives a fail grade and has the right to correct it in the second term. In such a case, participation in additional consultations with the teacher conducting the classes is required before the second date of the retake session.
4. If the number of the Student's absences from the classes exceeds 50% of the total class number, the Student receives an unsatisfactory grade in the first and second term of the examination session.
5. A student applying for exemption from classes on the basis of documented professional qualifications or confirmation of learning outcomes achieved under higher education is obliged to obtain the consent of the teacher who teaches the subject and on this basis, apply to the Dean for a relevant decision no later than October 31 of the given academic year. Exceeding the indicated deadline results in losing the right for exemption.
6. Due to the special safety requirement of medical procedures performed (especially with the use of a defibrillator, sharp instruments), Students are required to exercise particular caution. Students whose behaviour during classes is contrary to the safety rules specified by the teacher may be removed from participation in the classes in accordance with the provisions of points 2-4 above.
7. Students should make every effort to achieve learning progress, in particular:
 - a. submit all required pre-tests to the tutor in the subject,
 - b. obtain a positive result of all 6 post-partial tests, carried out immediately after the classes on a given topic (at least 56% of the total number of points to be obtained)
 - c. obtain a positive result of the cross-sectional post-test examining the knowledge from the all classes at their end (at least 56% of the total number of points to be obtained),
 - d. obtain a positive result of all skills assessments performed during the classes (at least 66% of the total number of points to be obtained according to the checklist).
8. Students have the right to set additional dates for consultations with the tutor in order to supplement the identified educational deficits or to re-pass the skills or post-test (re-test). The number of additional consultations cannot exceed 3 meetings with a given training group per semester.
9. Students may voluntarily take advantage of additional tasks and exercises prepared on the e-learning platform. The materials and exercises posted on the e-learning platform are designed to support the Student's progress and at the same time outline the requirements for graduates of the medical faculty at LEK (Medical Final Examination) in the field of emergency medicine. Students should expect ongoing feedback from the tutor about their learning progress, strengths and areas for further development.

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10. Students have the right to postulate changes in the way the subject is implemented in order to ensure optimal conditions for progress in science, in particular, they are encouraged to express their opinions in questionnaires.
11. Any disputes arising under these regulations or in matters not regulated herein should be settled first with the person conducting the classes, and in the event of disagreement with the person responsible for the subject, and then with the authorities of the Faculty of Medicine and Health Sciences.

METHODS OF ASSESSMENT

IN TERMS OF KNOWLEDGE	<ol style="list-style-type: none"> 1) pre-tests completed by students before class based on reading the recommended literature and additional materials. Depending on the subject: the tests contain true / false questions, a multiple-choice test with one correct answer or calculation tasks (paediatric recalculation); 2) post-tests completed by Students after completing a given module of classes. Tests include true / false questions and a multiple-choice single correct answer test. Tests are completed within 10 minutes; 3) Final examination completed by Students after completing all classes. The test contains 3 case reports for analysis (with a description of medical history, symptoms and an ECG record), in which the student must interpret the ECG record and, based on the available information, describe the appropriate diagnostic, therapeutic and therapeutic procedure based on the applicable guidelines of the European Resuscitation Council. Additionally, the test includes 18 multiple-choice test questions with one correct answer. One multi-response question with many correct answers is allowed, and the information about the possibility of choosing multiple answers is then indicated.
IN TERMS OF SKILLS	<ol style="list-style-type: none"> 1) Demonstration of skills under low fidelity simulation conditions using trainers and assessment based on a checklist; 2) Demonstration of scenario-based skills under indirect fidelity simulation conditions and checklist-based assessment; 3) Demonstration of skills in contact with the patient under the supervision of a teacher in hospital emergency department.
IN TERMS OF SOCIAL COMPETENCY	<p>Observation of Students in terms of their coping strategies in action under stress and time pressure, attitude towards constructive criticism, cooperation in a team, maintaining safety rules.</p>
FORMATIVE	<ol style="list-style-type: none"> 1) 6 partial post-tests; 2) 9 practice tests on skills assessed on the basis of a checklist. <p>Students are subject to continuous assessment throughout the semester of classes. Within the first pass, the student may improve the obtained "first approach" result based on the feedback from the teacher (both the post-test result and the assessed skill). In the course grade in the 1st term, the best result is taken into account.</p>

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SUMMATIVE (I & II terms)

I term (EXAM) and II term (RETAKE EXAM): an exam containing 3 case reports with an ECG record and 18 test questions - cross-sectional about the content of education throughout the semester of classes.

DESCRIPTION OF THE COURSE PASSING CONDITIONS

Students are subject to continuous assessment in the course of the exercises carried out on the basis of individual achievement evaluation cards. **To complete the course, the following is required:**

- 1) Submission of all **pre-tests** required for classes, which the Student prepares as part of self-study based on the recommended literature. Pre-tests should be submitted before each class, but not later than by the last date of classes carried out as part of the exercises at WCSM. The pre-test result is not included in the subject grade.
- 2) Obtaining a positive result for each sub-test post, i.e. obtaining at least 56% positive responses for each post-test.
- 3) Passing all skills that are not directly assessed (pass), i.e. use of an oropharyngeal tube and ventilation with a self-inflating bag (BVM), use of a laryngeal tube, use of a defibrillator for monitoring vital signs and performing defibrillation and pacing, performing an intraosseous access and needle cricothyrotomy, ventilation with BVM in children in different age groups, making basic calculations in pediatrics, umbilical IV access, placing a cervical collar, immobilizing a traumatic patient in a spinal board, peripheral IV access, performing a 12-lead ECG examination, interpretation of the presented ECG recording, collecting medical history and making a triage decision (prioritizing patients) at the HED.

Passing all the skills assessed in classes on the basis of checklists, i.e. assessing an adult patient in based on ABCDE scheme, performing manual defibrillation, performing transcutaneous pacing, performing endotracheal intubation through the mouth, managing the resuscitation team according to the ALS scheme, a child in a state of health emergency, managing the resuscitation team according to the EPALS scheme, performing resuscitation of the newborn immediately after birth according to the NLS scheme, performing a Primary Trauma Survey according to the ITLS scheme.

In the first term of the examination session, the Student has the option of obtaining one additional date for improving each assessed skill.

- 4) **The condition for taking the exam is to pass all the elements of the classes.**

Obtaining a negative result of the exam in the re-sit session or ultimately under the short-term condition means failing the subject and the necessity to repeat it.

GRADING SCALE

3,0 (SATISFACTORY)	56%-64% of the maximum number of points to be obtained
3,5 (SATISFACTORY PLUS)	65%-73% of the maximum number of points to be obtained
4,0 (GOOD)	74%-82% of the maximum number of points to be obtained
4,5 (GOOD PLUS)	83%-90% of the maximum number of points to be obtained
5,0 (VERY GOOD)	91%-100% of the maximum number of points to be obtained

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BASIC LITERATURE

- [1] European Resuscitation Council Guidelines for Resuscitation 2015: Section 3. Adult advanced life support. Jasmeet Soar, Jerry P. Nolan, Bernd W. Böttiger, Gavin D. Perkins, Carsten Lott, Pierre Carli, Tommaso Pellis, Claudio Sandroni, Markus B. Skrifvars, Gary B. Smith, Kjetil Sunde, Charles D. Deakin, on behalf of the Adult advanced life support section Collaborators 1 (Rudolph W. Koster, Koenraad G. Monsieurs, Nikolaos I. Nikolaou). *Resuscitation*, October 2015, Pages 100 – 147;
- [2] European Resuscitation Council Guidelines for Resuscitation 2015: Section 7. Resuscitation and support of transition of babies at birth. Jonathan Wyllie, Jos Bruinenberg, Charles Christoph Roehr, Mario Rüdiger, Daniele Trevisanuto, Berndt Urlesberger. *Resuscitation*, October 2015, Pages 249 – 263;
- [3] European Resuscitation Council Guidelines for Resuscitation 2015 Section 9. First aid David A. Zideman, Emmy D.J. De Buck, Eunice M. Singletary, Pascal Cassan, Athanasios F. Chalkias, Thomas R. Evans, Christina M. Hafner, Anthony J. Handley, Daniel Meyran, Susanne Schunder-Tatzber, Philippe G. Vandekerckhove. *Resuscitation*, October 2015, Pages 278 – 287;
- [4] European Resuscitation Council Guidelines for Resuscitation 2015: Section 10. Education and implementation of resuscitation. Robert Greif, Andrew S. Lockey, Patricia Conaghan, Anne Lippert, Wiebe De Vries, Koenraad G. Monsieurs, on behalf of the Education and implementation of resuscitation section Collaborators 1 . , Collaborators (John H.W. Ballance, Alessandro Barelli, Dominique Biarent, Leo Bossaert, Maaret Castrén, Anthony J. Handley, Carsten Lott, Ian Maconochie, Jerry P. Nolan, Gavin Perkins, Violetta Raffay, Charlotte Ringsted, Jasmeet Soar, Joachim Schlieber, Patrick Van de Voorde, Jonathan Wyllie, David Zideman). *Resuscitation*, October 2015, Pages 288 – 30;
- [5] European Resuscitation Council Guidelines for Resuscitation 2015: Section 11. The ethics of resuscitation and end-of-life decisions. Leo L. Bossaert, Gavin D. Perkins, Helen Askitopoulou, Violetta I. Raffay, Robert Greif, Kirstie L. Haywood, Spyros D. Mentzelopoulos, Jerry P. Nolan, Patrick Van de Voorde, Theodoros T. Xanthos, on behalf of, The ethics of resuscitation and end-of-life decisions section Collaborators 1 . , Collaborators (Marios Georgiou, Freddy K. Lippert, Petter A. Steen). *Resuscitation*, October 2015, Pages 302 – 311;
- [6] European Resuscitation Council Guidelines for Resuscitation 2015: Section 4. Cardiac arrest in special circumstances. Anatolij Truhlář, Charles D. Deakin, Jasmeet Soar, Gamal Eldin Abbas Khalifa, Annette Alfonzo, Joost J.L.M. Bierens, Guttorm Brattebø, Hermann Brugger, Joel Dunning, Silvija Hunyadi-Antičević, Rudolph W. Koster, David J. Lockey, Carsten Lott, Peter Paal, Gavin D. Perkins, Claudio Sandroni, Karl-Christian Thies, David A. Zideman, Jerry P. Nolan, on behalf of the Cardiac arrest in special circumstances section Collaborators 1 (Alessandro Barelli, Bernd W. Böttiger, Marios Georgiou, Anthony J. Handley, Thomas Lindner, Mark J. Midwinter, Koenraad G. Monsieurs, Wolfgang A. Wetsch). *Resuscitation*, October 2015, Pages 148 – 201;
- [7] European Resuscitation Council Guidelines for Resuscitation 2015: Section 6. Paediatric life support. Ian K. Maconochie, Robert Bingham, Christoph Eich, Jesús López-Herce, Antonio Rodríguez-Núñez, Thomas Rajka, Patrick Van de Voorde, David A. Zideman, Dominique Biarent, on behalf of the Paediatric life support section Collaborators 1 (Koenraad G. Monsieurs, Jerry P. Nolan). *Resuscitation*, October 2015, Pages 223 – 248;
- [8] Campbell, John (2018). *International Trauma Life Support for Emergency Care Providers* (8th Global ed.). Pearson.

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SUPPLEMENTARY LITERATURE

[1] Law of 8 September 2006 on State Emergency Medical Services (Dz. U. of 2017, poz. 2195, with amendments).