COURSE DESCRIPTION
Academic year 2025/2026

Course title in	Polish	Medyczne Czynności Ratunkowe
	English	Medical Emergency Procedures

1. LOCATION OF THE COURSE WITHIN THE SYSTEM OF STUDIES

1.1. Field of study/Course name	Medical Emergency Procedures
1.2. Course Syllabus prepared by	mgr Krzysztof Snoch, MSc
1.3. Contact details	krzysztof.snoch@ujk.edu.pl

2. GENERAL COURSE CHARACTERISTICS

2.1. Language of Instruction	English
2.2. Prerequisites *	1. Fundamental knowledge of human anatomy and physiology. 2. Fundamental knowledge of pharmacology. 3. Basic knowledge of emergency medicine.

3. DETAILED COURSE CHARACTERISTICS

3.1. Form of Instruction		Lectures, practical classes
3.2. Place of Instruction		Lectures - online Practical classes - teaching facilities of the Medical Simulation Centre (CSM UJK)
3.3. Form of assessment		OSCE exam
3.4. Teaching Methods		Lecture: e-learning supported by multimedia presentations. Practical classes: work with medical simulators, simulated medical incidents, high-fidelity medical simulations (pre-briefing, group exercises, debriefing), and training on medical manikins.
3.5. Bibliography	**Required reading**	1. European Resuscitation Council. *European Resuscitation Council Guidelines on Cardiopulmonary Resuscitation 2025.* 2. Alson RL, Han K, Campbell JE (eds.). *ITLS International Trauma Life Support. Prehospital Trauma Care.* 9th ed. Kraków: Medycyna Praktyczna; 2022. 3. McCafferty J, Forsyth JM (eds.). *Point of Care Ultrasound Made Easy.* 1st ed. Boca Raton (FL): CRC Press; 2020. 4. Rak M. *Does the Patient Have a pH? Arterial Blood Gas Analysis: A Clinical Approach.* Warsaw: PZWL Medical Publishing; 2024. 5. Brown CA III, Sakles JC, Mick NW, Walls RM (eds.). *The Walls Manual of Emergency Airway Management.* 6th

		ed. Philadelphia (PA): Wolters Kluwer; 2022. 6. Kosiński S, Darocha T, Sadowski J, Drwiła R (eds.). *Hypothermia: Clinical Aspects of Body Cooling, Analysis of Dangers, Directions of Modern Treatment.* New York: Columbia University Press/Jagiellonian University Press; 2017.
	Further reading	1. American Heart Association. *2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care.* Circulation. 2020. 2. National Association of Emergency Medical Technicians (NAEMT). *PHTLS: Prehospital Trauma Life Support.* 10th ed. Burlington (MA): Jones & Bartlett Learning; 2024. 3. Ilczak T (ed.). *Prehospital Emergency Procedures.* Vol. 1. Warsaw: PZWL Medical Publishing; 2022. 4. Rak M. *POCUS – Emergency Ultrasonography.* Warsaw: PZWL Medical Publishing; 2021. 5. Zaborowski T. *Airway Patency in Paramedic Practice.* Katowice: Elamed Media Group; 2023.

4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED LEARNING OUTCOMES

4.1. Course objectives (by form of instruction)

Lectures:

C1. To provide theoretical foundations of pain assessment, principles, and techniques of analgesic treatment in emergency medicine.
C2. To discuss non-instrumental and instrumental airway management techniques, including indications for endotracheal intubation, mechanical ventilation, and cricothyrotomy.
C3. To present principles of ultrasound-guided peripheral venous cannulation, including patient qualification, equipment selection, and complication prevention.
C4. To introduce the principles of intraosseous access, including indications, contraindications, and complications.
C5. To present the theoretical foundations of clinical ultrasonography and the use of POCUS protocols in emergency medicine.
C6. To discuss the management of pneumothorax, including diagnosis, clinical presentation, decompression, and patient stabilization.
C7. To discuss prehospital management of trauma patients.
C8. To present principles of analysis and interpretation of critical parameters and their clinical relevance.
C9. To discuss medical procedures in mass casualty incidents, triage principles, and disaster management organization.
C10. To discuss recognition, classification, and management of hypothermia, including warming methods, transport principles, and cardiopulmonary resuscitation procedures.

Practical Classes:

C1. To acquire practical skills in analgesic treatment using pain assessment scales and safe pharmacotherapy principles.
C2. To master airway management techniques: supraglottic devices, endotracheal intubation, cricothyrotomy, and assisted ventilation.
C3. To perform ultrasound-guided peripheral venous cannulation.
C4. To practice intraosseous access using automated devices on training models.
C5. To perform POCUS examinations (FAST, eFAST) in trauma patient assessment.
C6. To practice tension pneumothorax decompression.
C7. To recognize and interpret acid–base disturbances based on arterial blood gas results and undertake therapeutic decisions.
C8. To participate in simulations of mass casualty incidents, including triage, communication, teamwork, and decision-making under stress.
C9. To conduct clinical simulations in hypothermia management, including safe patient warming and resuscitation procedures.
C10. To manage trauma patients, including trauma assessment and control of massive hemorrhage.

4.2. Course content (by form of instruction)

Theoretical Classes:

1. Analgesic Management

- Pain assessment scales and their clinical application.
- Pharmacological management of pain in emergency conditions – medications, dosages, and routes of administration.
- Principles of analgesia in the prehospital setting.
- Complications of analgesic therapy and strategies for their prevention.

2. Management of the Difficult Airway

- Indications for instrumental airway management.
- Supraglottic airway techniques and endotracheal intubation using direct laryngoscopy and video laryngoscopy.
- Cricothyrotomy – indications, contraindications, and technique.
- Assisted ventilation and maintenance of airway patency.

3. Peripheral Venous Cannulation and Ultrasound-Guided Cannulation

- Anatomy of the venous system of the upper and lower extremities.
- Indications, contraindications, and techniques of traditional cannulation.
- Fundamentals of ultrasonography in the assessment of peripheral vessels.
- Selection of the optimal cannulation site.
- Maintenance of cannula patency and management of complications.

4. Intraosseous Access

- Indications for intraosseous access.
- Principles of using commercially available automated devices.
- Common insertion sites and technique.
- Complications and verification of access effectiveness.

5. Ultrasonography in Emergency Care (POCUS)

- Basic physical principles of ultrasound operation.
- FAST and eFAST protocols – indications and interpretation.
- Documentation and safety considerations in emergency ultrasonography.

6. Management of Pneumothorax

- Types of pneumothorax – recognition and clinical presentation.
- Imaging and ultrasound diagnostics.
- Technique of tension pneumothorax decompression – indications and procedural steps.

7. Analysis of Critical Parameters

- Fundamental principles of arterial blood gas interpretation.
- Types of acid–base and fluid–electrolyte disturbances and their correction.
- Prehospital and in-hospital management of metabolic disorders.

8. Multiple Casualty Incidents and Disasters

- Medical triage systems.
- Organization of rescue operations.
- Communication and command in crisis situations.

9. Hypothermia

- Classification of hypothermia and assessment scales.
- Pathophysiology of hypothermia and its systemic effects.
- Principles of appropriate warming – passive and active methods.
- Pharmacotherapy in hypothermic patients.
- Principles of cardiopulmonary resuscitation in hypothermia.
- Safe transport of hypothermic patients.

Practical Classes:

- Practical application of pain assessment scales and administration of analgesia.
- Airway management training on simulators for difficult airway scenarios.
- Endotracheal intubation using direct and video laryngoscopy.

- Ultrasound-guided peripheral venous cannulation.
- Establishment of intraosseous access using training models.
- POCUS examinations – identification of free fluid, pneumothorax, and assessment of cardiac function.
- Tension pneumothorax decompression using simulation trainers.
- Practical exercises in the analysis of critical parameters.
- Practical management of hypothermic patients, including appropriate resuscitation procedures.
- Triage exercises and emergency team management.
- Debriefing sessions – analysis of errors and key learning points following each simulation.

4.3. Intended learning outcomes

	Upon successful completion of the course, the student
	In terms of **KNOWLEDGE**
W01	demonstrates knowledge and understanding of pain assessment scales and pain management methods.
W02	demonstrates knowledge and understanding of analgesic treatment implementation, including pediatric pharmacotherapy.
W03	demonstrates knowledge and understanding of the indications for instrumental airway management and the techniques for restoring and maintaining airway patency
W04	demonstrates knowledge and understanding of the indications for orotracheal intubation using direct laryngoscopy without the administration of neuromuscular blocking agents, as well as for assisted (mechanical) ventilation, and the techniques for performing these procedures
W05	the indications for peripheral venous cannulation of the upper and lower extremities and of the external jugular vein, including the techniques of insertion
W06	demonstrates knowledge and understanding of the principles of establishing intraosseous access using a commercially available dedicated device
W07	demonstrates knowledge and understanding of the types and clinical manifestations of pneumothorax
W08	demonstrates knowledge and understanding of the methodology for measuring and determining concentrations of critical laboratory parameters
W09	demonstrates knowledge and understanding of the principles of transport of patients with traumatic injuries
W010	demonstrates knowledge and understanding of the types of disasters and the medical procedures and rescue operations undertaken in mass casualty incidents
W011	demonstrates knowledge and understanding of acid–base and fluid–electrolyte disturbances, as well as the principles of prehospital and Emergency Department management of such disorders
W012	demonstrates knowledge and understanding of specialized procedures applied in life-threatening emergencies of traumatic origin in both prehospital care and the Emergency Department

W013	demonstrates knowledge and understanding of the principles of diagnostic imaging, with particular emphasis on ultrasonographic assessment within emergency protocols
	in terms of **SKILLS**
U01	is able to administer and appropriately implement analgesic treatment
U02	is able to assess the intensity of pain using validated pain assessment scales
U03	is able to establish airway patency using supraglottic airway devices
U04	is able to perform endotracheal intubation using direct laryngoscopy
U05	is able to perform cricothyrotomy (needle cricothyrotomy);
U06	is able to control and manage external bleeding and hemorrhage using standard dressings, hemostatic dressings, and tourniquets
U07	is able to establish intraosseous access using a commercially available dedicated device
U08	is able to implement appropriate management of life-threatening pneumothorax, including emergency decompression
U09	is able to perform prehospital medical triage
U010	is able to implement medical procedures and rescue operations in mass casualty incidents
U011	is able to perform ultrasound-guided peripheral venous cannulation of the upper and lower extremities
	In terms of **SOCIAL COMPETENCIES**
K01	is prepared to engage in active listening, establish effective interpersonal relationships, and communicate with patients in a clear, effective, and empathetic manner
K02	is prepared to recognize factors influencing both their own reactions and those of the patient
K03	is prepared to practice independently in accordance with general and professional ethical principles, applying a holistic and individualized approach to patient care with due respect for patients' rights
K04	is prepared to organize their own work effectively and to collaborate within an interdisciplinary team of specialists, including representatives of other healthcare professions, also in multicultural and multinational environments
K05	is prepared to recognize and acknowledge personal limitations, undertake self-assessment of knowledge and skills deficits, and identify ongoing educational needs
K06	is prepared to act in accordance with the best interests and welfare of the patient

4.4. Methods of assessment of the intended learning outcomes

Teaching outcomes (code)	Method of assessment (+/-)																			
	OSCE exam			Written assessment			Practical assessment			Effort in class*			~~Self-study*~~			Group work*			~~Other (please specify) *~~		
	Form of classes			*Form of classes*			*Form of classes*			*Form of classes*			*Form of classes*			*Form of classes*			*Form of classes*		
	L	*C*	*pc*	*L*	*C*	*...*	*L*	*PC*	*C*	*L*	*C*	*PC*	*L*	*C*	*...*	*L*	*PC*	*...*	*L*	*C*	*...*
W01										+											
W02										+											
W03										+											
W04										+											
W05										+											
W06										+											
W07										+											
W08										+											
W09										+											
W010										+											
W011										+											
W012										+											
W013										+											
U01			+														+				
U02			+														+				
U03			+														+				
U04			+														+				
U05			+														+				
U06			+														+				
U07			+														+				
U08			+														+				
U09			+														+				
U010			+														+				
U011			+														+				
U012			+														+				
K01																	+				
K02																	+				
K03																	+				
K04																	+				
K05																	+				
K06																	+				

**delete as appropriate*

4.5. Criteria for Assessing Learning Outcomes		
Form of classes	**Grade**	**Grading Criteria**
lecture (L)	**3**	Demonstrates knowledge of the course content at the level of 61%–68%.
	3,5	Demonstrates knowledge of the course content at the level of 69%-76%
	4	Demonstrates knowledge of the course content at the level of 77%-84%
	4,5	Demonstrates knowledge of the course content at the level of 85%-92%
	5	Demonstrates knowledge of the course content at the level of 93%-100%
Practical classes (PC)	**3**	Practical task performance at the level of 61%-68%
	3,5	Practical task performance at the level of 69%-76%
	4	Practical task performance at the level of 77%-84%
	4,5	Practical task performance at the level of 85%-92%
	5	Practical task performance at the level of 93%-100%

5. BALANCE OF ECTS CREDITS – STUDENT'S WORK INPUT

Category	**Student's workload**	
	Full-time Studies	**Part-time Studies**
DIRECT PARTICIPATION (CONTACT HOURS WITH INSTRUCTOR)	**-**	**55**
Participation in lectures	-	12
Participation in classes/practical classes	-	43 (40 sim. +3 exam)
STUDENT'S INDEPENDENT WORK (NON-CONTACT HOURS)	**-**	**-**
Preparation for the lecture	-	-
Preparation for classes/practical classes	-	-
TOTAL NUMBER OF HOURS	**-**	**55**
ECTS CREDITS for the course of study	**-**	**2**

**delete as appropriate*

Approved for implementation (date and signatures of course instructors for the given academic year)

……