



### Extreme Medicine

Specialty: **221 " Dentistry"**

Educational and professional program: **Dentistry**

Component code in the educational program: **EC 85**

Level of higher education: **second (master's)**

Form of education: **full-time**

Year of study: **5**

Semester(s): **IX (fall), X (spring)**

Type of educational component: **elective**

Academic year: **2028-2029**

Volume: **3 ECTS credits (90 hours)**

Training sessions: **lectures, practical classes, consultations**

Final control: **differentiated assessment**

Prerequisites: based on the knowledge already obtained by the applicants in human anatomy, medical and biological physics, biological and bioorganic chemistry, physiology, pathomorphological disciplines, topographic anatomy and topographic surgery, general surgery, pharmacology, hygiene and integrates with surgery, pediatric surgery, neurosurgery, anesthesiology and resuscitation, traumatology and orthopedics.

Department/division: Department of Emergency and Emergency Care, Orthopedics, Traumatology and Prosthetics, 13 Nezalezhnosti Ave., Main Building of the RCH, 8th Floor

Head of the educational component: Assoc. Prof. **Bitchuk Mykola Denisovich**,  
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Educational component page in the KhNMU Distance Learning System:  
<https://distance.knmu.edu.ua/course/view.php?id=4992>

### DESCRIPTION OF THE EDUCATIONAL COMPONENT

**Extreme Medicine** is a clinical discipline that teaches the specific features of providing medical care in conditions that are dangerous or difficult for both patients and healthcare professionals. The main characteristic of work in extreme conditions is the simultaneous admission of a large number of injured and/or affected individuals to the stages of medical evacuation, as well as the large volume of surgical procedures that must be performed within a short period of time.

Under these circumstances, it is not enough to know how to perform surgical interventions, apply dressings and splints, or conduct blood transfusions. The organization of work becomes of primary importance. The success of treatment largely depends on ensuring continuity and consistency of actions at all stages of medical care.

This requires not only technical skills but also the ability to make rapid decisions, effective communication between healthcare professionals, and coordination of actions under stressful conditions. Thus, extreme medicine combines medical knowledge with organizational skills in order to achieve optimal outcomes in critical situations.

**OBJECTIVE :** The aim of the course is to prepare healthcare professionals to provide timely and effective care to victims in extreme conditions such as armed conflicts, natural disasters, or large-scale accidents. The main focus is on saving lives, minimizing the consequences of injuries, and organizing evacuation and treatment. Students will study the organization of medical support in emergency situations, preparation for work within the disaster medicine system, and ensuring the safety of medical personnel. In addition, it is important to make well-grounded decisions based on the diagnosis of emergency conditions and to master practical skills and medical procedures.

### LEARNING OUTCOMES:

- Know and apply procedures and measures for ensuring the quality of education and criteria for evaluating educational activities.
- Develop and apply tools for diagnosing students' educational outcomes.



- Understand the place of the discipline in the system of specialist training and its relationship with other fields of knowledge and academic disciplines.

## CONTENT OF THE EDUCATIONAL COMPONENT

### List of topics for practical classes (30 hours):

1. Organizational structure and functioning of the emergency and urgent medical care service
2. Procedure for providing emergency medical care to victims at the pre-hospital stage. Algorithm of actions of the ambulance team in a road traffic accident.
3. Modern methods of ensuring airway patency and lung ventilation (mechanical ventilation).
4. Cardiopulmonary resuscitation (CPR).
5. Emergency conditions of exogenous origin. Drowning. Snake bites. Emergency care for allergic reactions. Anaphylactic shock.
6. Emergency care for traumatic injuries.

### List of topics for students' independent study (60 hours):

1. Organizational structure and functioning of the emergency and urgent medical care service
2. Procedure for providing emergency medical care to victims at the pre-hospital stage. Algorithm of actions of the ambulance team in a road traffic accident.
3. Modern methods of ensuring airway patency and lung ventilation (mechanical ventilation).
4. Cardiopulmonary resuscitation (CPR).
5. Emergency conditions of exogenous origin. Drowning. Snake bites. Emergency care for allergic reactions. Anaphylactic shock.
6. Emergency care for traumatic injuries.

VTS is aimed at deepening and consolidating theoretical knowledge obtained during classroom training and contributes to the formation of professional competencies. The results of VTS are subject to control and are included in the final knowledge control.

**Consultations:** online, with prior registration on the course page in the Distance Learning System.

**Teaching methods:** lecture, exercises and practical work, solving situational tasks and cases, standardized patient method

## EVALUATION

**Current educational activity (CEA).** Assessment of the success of education seekers is carried out in accordance with the Instructions for assessing the educational activity of higher education seekers at KhNMU ([https://knmu.edu.ua/doc\\_block\\_type/instrukcziyi-navchalnogo-proczesu/](https://knmu.edu.ua/doc_block_type/instrukcziyi-navchalnogo-proczesu/)).

During the assessment of mastery of each topic of the discipline (CEA) and the final class (FC), the student receives a grade according to the traditional 4-point system: “excellent,” “good,” “satisfactory,” and “unsatisfactory.” Grades are entered into the electronic journal. Unsatisfactory grades must be retaken in accordance with the Regulation on the Procedure for Making Up Missed Classes by KhNMU Students ([https://knmu.edu.ua/wp-content/uploads/2021/05/pol\\_por-vidprac-zaniat.pdf](https://knmu.edu.ua/wp-content/uploads/2021/05/pol_por-vidprac-zaniat.pdf)).

The final score for (CEA) and the final classes (FC) is determined as the arithmetic mean of the traditional grades for each class and the final class, rounded to two decimal places, and then converted into a multi-point scale according to the tables in Appendix 2.

**Individual assignments (IA)** are assessed with up to 10 points.

**Final class.** The final class is mandatory and is conducted according to the working curriculum of the discipline during the semester according to the schedule, during class time.

**Final grade for the discipline (FD).** The number of points obtained by the student for the educational component is then assessed according to the 200-point scale, the ECTS scale ("A", "B", "C", "D", "E"), and the traditional grading system (“satisfactory,” “good,” “excellent”).



**Appeals** regarding the results of the final assessment are carried out in accordance with the procedure established at KhNMU. ([https://knmu.edu.ua/wp-content/uploads/2021/05/polog\\_apel\\_kontrol.pdf](https://knmu.edu.ua/wp-content/uploads/2021/05/polog_apel_kontrol.pdf))

## EDUCATION COMPONENT POLICIES

**Recommendations for course work:** actively participate in all forms of work in classes, devote 1-2 hours daily to independent work and preparation for classes, ask questions during classes, attend consultations, submit assignments on time, and complete all forms of control.

**Attendance at classes.** Attendance at lectures and practical classes is mandatory. The uniform during offline classes is a white medical gown. If you are more than 5 minutes late, you may not be allowed to class. Missed classes are made up in accordance with the Regulations on the procedure for making up academic classes by students of KNMU ([https://knmu.edu.ua/wp-content/uploads/2021/05/pol\\_por-vidprac-zaniat.pdf](https://knmu.edu.ua/wp-content/uploads/2021/05/pol_por-vidprac-zaniat.pdf)).

**Academic integrity.** KhNMU stands on zero tolerance for manifestations of academic dishonesty. Any violations of the principles of academic integrity entail liability in accordance with the procedure established at KNMU ([https://knmu.edu.ua/wp-content/uploads/2021/05/polog\\_ad-1.pdf](https://knmu.edu.ua/wp-content/uploads/2021/05/polog_ad-1.pdf)).

**The use of electronic gadgets and artificial intelligence tools** is permitted only with the permission of the teacher.

**Policy on individuals with special educational needs.** Applicants with special educational needs should contact their teacher to develop an individual educational trajectory.

**Teacher response time:** 24 hours.

### Technical requirements for working on the course:

- access to a computer, laptop, tablet or smartphone
- corporate Google account with your own photo
- skills in working with Google Workspace (Google Meet, Docs, Sheets, Slides, Forms) and Moodle

**Technical support:** ASU (ev.shevtsov@knmu.edu.ua), Google (tehotdelknmu@gmail.com), Moodle (al.korol@knmu.edu.ua)

## RECOMMENDED SOURCES

1. Emergency Medicine: Textbook / Khalmuradov B.D., Valyansky P.B., Publishing House: Educational Literature Center 2021.- 208 p.: ISBN 9786176734789
2. Medicine in different natural conditions: a textbook on providing first and emergency medical aid / Tate Higgins, Ali S. Arastu, Paul S. Auerbach, - K. VSV "Medicine" 2024. – 244 p.: ISBN 9786175059432
3. Prehospital care for injuries: a textbook Roy L. Elson, Kay G. Gan, John E. Campbell. – K. VSV "Medicine" 2023. – 464.: ISBN 9786175059159
4. Emergency Medicine. Emergency (urgent) medical care / I.S. Zozulya, A.O. Volosovets, O.G. Shekera.; edited by I. S. Zozulya. –K.: VSV “Medicine”, 2023. –560 p. ISBN 9786175059173
5. First emergency and tactical medical aid at the prehospital stage / V. Tarasyuk, M. Matviychuk, I. Palamar.: edited by V.S. Tarasyuk. – K. VSV “Medicine”, 2021 – 504 p. ISBN 9786175058398
6. Emergency and urgent medical care in questions and answers: a textbook / M. I. Shved [and others]; ed. M. I. Shved. - Ternopil: Ukrmedkn., 2018. - 311 p. : tables. - Bibliography: p. 306-311. - Code NNMBU: B-9762.
7. Home medical care in extreme situations and medical protection of the population in emergency situations: A textbook for training specialists of the first (educational and professional) level, field of knowledge 22 "Healthcare", specialty 227 "Physical therapy, occupational therapy" (1st year) (general



editorship of Volyansky P.B. and Grinzovsky A.M.) / Grinzovsky A.M., Volyansky P.B., Kalashchenko S.I. and others. – Kyiv: IDUTSZ, 2018. – 216 p.

## **Auxiliary**

1. Basic Life Support. European Resuscitation Council Guidelines 2021. [https://cprguidelines.eu/assets/guidelines-translations/BLS\\_The-ERC-Guidelines-2021.pdf](https://cprguidelines.eu/assets/guidelines-translations/BLS_The-ERC-Guidelines-2021.pdf)
- 2 Levkin O.A., Pertsov V.I., Myrnyi S.P. Textbook “Basic, specialized practical skills and algorithms for providing emergency medical care”. Zaporizhzhia, 2020. – 170 p.
3. Methodological recommendations for providing emergency medical care to victims at the pre-hospital stage in conditions of hostilities/martial law. Order of the Ministry of Health of Ukraine dated 15.03.2022 No. 488. <https://zakon.rada.gov.ua/rada/show/v0488282-22#Text>
4. New clinical protocol “Emergency medical care: prehospital stage”. 2019 <https://zakon.rada.gov.ua/rada/show/v1269282-19#Text>

## **Information resources**

1. Order of the Ministry of Health of Ukraine dated 05.06.2019 No. 1269 "On approval and implementation medical and technological documents on the standardization of emergency medical care". New clinical protocol "first emergency aid: pre-hospital stage". <https://moz.gov.ua/uk/decrees/nakaz-moz-ukraini-vid-05062019--1269-pro-zatverdzhennja-ta-vprovadzhennja-mediko-tehnologichnih-dokumentiv-zi-standartizacii-ekstrenoi-medichnoi-dopomogi>
2. Official website of the European Resuscitation Council - <https://www.erc.edu/>
3. Regulations on the Commission on Academic Integrity, Ethics and Conflict Management of KNMU [https://knmu.edu.ua/wp-content/uploads/2021/05/polog\\_komis\\_ad.pdf](https://knmu.edu.ua/wp-content/uploads/2021/05/polog_komis_ad.pdf)
4. Testing Center <https://www.testcentr.org.ua/uk/>
5. <http://essuir.sumdu.edu.ua/handle/123456789/9732>

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