

МЕДИЦИНСКИ УНИВЕРСИТЕТ - ВАРНА  
„Проф. д-р Параскев Стоянов“

Ул. „Марин Дринов“ 55, Варна 9002, България  
Тел.: 052/ 65 00 57, Факс: 052/ 65 00 19  
e-mail: uni@mu-varna.bg, www.mu-varna.bg



MEDICAL UNIVERSITY - VARNA  
"Prof. Dr. Paraskev Stoyanov"

55, Marin Drinov Str., 9002 Varna, Bulgaria  
Tel.: +359 52/ 65 00 57, Fax: + 359 52/ 65 00 19  
e-mail: uni@mu-varna.bg, www.mu-varna.bg

## FACULTY OF MEDICINE

Approved:

Dean:

(Prof. Yoto Yotov, MD, PhD)



## SYLLABUS

### IN *DISASTER MEDICINE*

Specialty	MEDICINE
Educational - qualification degree	master
Organizational form of education	full-time
Auditorial activity (Lectures/Seminars)	45 (15/30)
Extra-auditorial activity	45
ECTS- credits	3
Discipline type	compulsory
Semester of education	third
Semester of examination	third
Developer of the Syllabus:	Assoc. Prof. Nikolina Radeva, PhD

Varna, 2024

## ANNOTATION

<b>Aims of the course</b>	<p>The "Disaster Medicine" discipline aims to provide in-depth knowledge of the organization, planning and management of medical response as one of the main activities for protecting the population in disaster situations, as well as to prepare future medical specialists to provide timely, effective and medical care that is in line with the condition and needs of victims of conventional and unconventional disasters and with Mass Casualties Incidents.</p> <p>According to specialists from the United Nations Office for Disaster Risk Reduction and the World Health Organization, the number of deaths and serious injuries from natural and anthropogenic disasters, conventional and unconventional Mass casualties incidents is constantly increasing. Disaster situations are characterized by the large number of people in need of medical care and the many factors that make it difficult to respond to and recover from the affected population - destruction, fires, floods, increased radiation background, the presence of toxic substances, a complicated epidemic situation, difficult communication, etc.</p> <p>Experience shows that a large number of victims necessitates a change in the organization of medical response. Its essence and features in disasters are the main tasks of medical specialists and decisive factors for preserving the life and health of the population.</p> <p>In the training of students, special attention is paid to their detailed theoretical preparation on the general principles, concepts and theories in the field of medical training, as well as their practical skills related to preparedness and response to disaster situations.</p>
---------------------------	---

<b>Outcomes for students at the end of the course:</b>	
<b>Competences</b>	
<b>Competence group</b>	<b>1. Patient Care</b> that is compassionate, appropriate, and effective for treating health problems and promoting health.
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>▪ Providing medical response to disasters and conventional mass casualties incidents.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• Assessment of the condition of the injured and performing triage (medical sorting) – at the scene of the incident and during evacuation.</li> <li>• Applying of basic life support techniques (BLS) in disasters and in Mass Casualty Incidents, determining the priorities of medical care and evacuation of casualties, choosing the type and organization of the evacuation being carried out. Performing Cardiopulmonary Resuscitation. Using an Automated External Defibrillator. Performing temporary hemostasis. Placing the victim in the correct position according to the type of injury. Transporting of conscious and unconscious victim.</li> <li>• Providing specific first aid in the event of fires, earthquakes, floods, transport accidents, industrial accidents, extremely low and extremely high temperatures, etc.</li> </ul>



	<ul style="list-style-type: none"> <li>• Geopositioning of assembly points for lightly and severely injured people awaiting evacuation, determination of safe evacuation routes, the number of necessary transport vehicles (ambulances, medical teams) for evacuation and suitable medical facilities for receiving the injured patients.</li> <li>• Determining the need to establish a temporary medical point (front medical posts/field hospitals) and its correct location, necessary support units, number of medical and specialized teams, calculated based on the number of casualties per team per hour.</li> <li>• Preparing and conducting evacuation of victims in various conventional and unconventional risks.</li> </ul>
<b>Competence group</b>	<b>2. Medical Knowledge</b> about established and evolving biomedical, clinical, and cognate (eg, epidemio-logical and social-behavioral) sciences and the application of this knowledge to patient care.
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>▪ Disaster management.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>▪ Systematization and analysis of terminology.</li> <li>▪ Risk assessment for conventional and unconventional incidents.</li> <li>▪ Identifying vulnerabilities.</li> <li>▪ Allocation of functions and activities of medical forces and assets in the individual phases of the disaster management cycle - response, recovery, mitigation and preparedness.</li> </ul>
<b>Competence group</b>	<b>3. Practice-Based Learning and Improvement</b> that involves investigation and evaluation of their own patient care, appraisal, and assimilation of scientific evidence, and improvements in patient care.
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>• Organization of medical response in unconventional incidents – production (Industrial Toxic Substances) and radiation accidents, chemical terrorism with Chemical Warfare Agents, radiation terrorism and bioterrorism.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>▪ Determining the degree of contamination with chemical, radioactive and biological agents of the environment by using appropriate devices.</li> <li>▪ Determining the direction of movement of a radioactive cloud or formation of a Focus of Chemical Contamination in relation to the discharged quantities of hazardous substances and meteorological conditions (presence of rain, wind – direction and speed of movement). Determining the risk for populated areas in relation to geographical features. Determining the location of evacuation assembly points.</li> <li>▪ Working with automatic chemical reconnaissance instruments (detectors) to determine the type and degree of gass risk and dosimeters to determine the type and degree of radiation risk.</li> <li>▪ Recognition of biological agents and an emerging outbreak of biological contamination, epidemiological outbreak. Limiting the spread of epidemics through analysis of the situation and introduction of specific measures for infected and contact persons.</li> <li>▪ Working with devices for detecting biological substances.</li> <li>▪ Determining the need to use personal protective equipment (PPE), selecting the type of PPE based on a risk assessment.</li> <li>▪ Organizing “hot”, “warm” and “cold” zones at the scene of the incident.</li> </ul>



	<ul style="list-style-type: none"> <li>▪ Assessment of the need to perform decontamination, selection of methods, means and agents for decontamination and knowledge of the equipment necessary for the purpose.</li> <li>▪ Organization of hygienic and anti-epidemic provision in the event of conventional and unconventional terrorism, bioterrorism, etc.</li> </ul>
<b>Competence group</b>	<b>4. Interpersonal and Communication Skills</b> that result in effective information exchange and teaming with patients, their families, and other health professionals.
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>▪ Protection of the population in disasters.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• Development of a protection plan for acute mass intoxications</li> <li>• Development of a radiation hazard protection plan</li> <li>• Developing a plan for protection in the event of bioterrorism or the occurrence of epidemics and pandemics</li> <li>• Development of a protection plan for conventional risks – traumatic injuries.</li> <li>• Presenting a problem to a target group of the population and justifying its proposed solution using various visual means: creating a personal support network and developing a personal assessment of essentials.</li> </ul>
<b>Competence group</b>	<b>5. Professionalism</b> , as manifested through a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to diverse patient population groups.
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>▪ Stressors in disaster situations and impact on the exposed population.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• Recognition of individuals with reactive psychoses.</li> <li>• Identification of vulnerable groups.</li> <li>• Organizing medical care for people with psychogenic disorders in the presence of extreme factors.</li> <li>• Providing psychological first aid in disasters.</li> <li>• Implementing mental and emotional health programs in disasters.</li> </ul>
<b>Competence group</b>	<b>6. Systems-Based Practice</b> , as manifested by actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>▪ Organization of medical response in maritime accidents.</li> </ul>
<b>Skills</b>	<ul style="list-style-type: none"> <li>• Recognizing medical emergencies at sea in traumatic incidents.</li> <li>• Recognize the general principles and methods for implementing telemedicine consulting services at sea.</li> <li>• Implementation of search and rescue procedures for large numbers of people in distress at sea.</li> <li>• Recognizing the different ways to conduct medical evacuation at sea based on the condition of the victims.</li> </ul>



**Key competencies for lifelong learning<sup>1</sup>, that the discipline develops:**

**Literacy competence**

Literacy is the ability to identify, understand, express, create, and interpret concepts, feelings, facts and opinions in both oral and written forms, using visual, sound/audio and digital materials across disciplines and contexts. It implies the ability to communicate and connect effectively with others, in an appropriate and creative way.

X

**Multilingual competence**

This competence defines the ability to use different languages appropriately and effectively for communication. It broadly shares the main skill dimensions of literacy: it is based on the ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing) in an appropriate range of societal and cultural contexts according to one's wants or needs.

X

**Mathematical competence and competence in science, technology, engineering**

A. Mathematical competence is the ability to develop and apply mathematical thinking and insight in order to solve a range of problems in everyday situations. Building on a sound mastery of numeracy, the emphasis is on process and activity, as well as knowledge. Mathematical competence involves, to different degrees, the ability and willingness to use mathematical modes of thought and presentation (formulas, models, constructs, graphs, charts).

B. Competence in science refers to the ability and willingness to explain the natural world by making use of the body of knowledge and methodology employed, including observation and experimentation, in order to identify questions and to draw evidence-based conclusions. Competences in technology and engineering are applications of that knowledge and methodology in response to perceived human wants or needs. Competence in science, technology and engineering involves an understanding of the changes caused by human activity and responsibility as an individual citizen.

X

**Digital competence**

Digital competence involves the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society. It includes information and data literacy, communication and collaboration, media literacy, digital content creation (including programming), safety (including digital well-being and competences related to cybersecurity), intellectual property related questions, problem solving and critical thinking.

X

**Personal, social and learning to learn competence**

Personal, social and learning to learn competence is the ability to reflect upon oneself, effectively manage time and information, work with others in a constructive way, remain resilient and manage one's own learning and career. It includes the ability to cope with uncertainty and complexity, learn to learn, support one's physical and emotional well-being, to maintain physical and mental health, and to be able to lead a health-conscious, future-oriented life, empathize and manage conflict in an inclusive and supportive context.

**Citizenship competence**

the ability to act as responsible citizens and to fully participate in civic and social life, based on an understanding of social, economic, legal and political concepts and structures, as well as global developments and sustainability.

X

**Entrepreneurship competence**

Entrepreneurship competence refers to the capacity to act upon opportunities and ideas, and to transform them into values for others. It is founded upon creativity, critical thinking and problem solving, taking initiative and perseverance and the ability to work collaboratively in order to plan and manage projects that are of cultural, social or financial value.

**Cultural awareness and expression competence**

Competence in cultural awareness and expression involves having an understanding of and respect for how ideas and meaning are creatively expressed and communicated in different cultures and through a range of arts and other cultural forms. It involves being engaged in understanding, developing and expressing one's own ideas and sense of place or role in society in a variety of ways and contexts.

<sup>1</sup> As defined in 2018 r. by the European Union Council ([https://eur-lex.europa.eu/legal-content/BG/TXT/HTML/?uri=CELEX:32018H0604\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/BG/TXT/HTML/?uri=CELEX:32018H0604(01)&from=EN))

**Methods of education**

- lectures
- seminars
- practicals
- practical and creative problem solving, case studies
- ppt presentations
- discussions
- individual work with scientific resources and data bases
- consultations

**Links with other courses from the curriculum of the specialty**

- **Builds upon knowledge acquired in/Depends on:**
  - Human anatomy and histology
  - Physiology
- **Other related disciplines:**
  - Anesthesiology, resuscitation and intensive care
  - Orthopedics and traumatology
  - Pathophysiology
  - Epidemiology, infectious diseases, medical parasitology and tropical medicine
  - First aid at home and office
  - Maritime incidents
  - Emergency medical assistance in disaster situations