

**MEDICAL UNIVERSITY PLOVDIV**

# **PROGRAMME**

**“DISASTER MEDICINE”  
For medical students**

**Approved by the Department Council № 12 on 03.07.2020  
Confirmed by the Faculty Council № 5 on 08.07.2020**

## DISASTER MEDICINE CURRICULUM

Programme	Final exam (semester)	Course hours				Hours by year and semester	
		Total	Lectures	Practical courses	Credits	3 <sup>rd</sup> year	
Disaster medicine	V					V	
		45	15	30	2,2	15	30

**Course name:**

„Disaster Medicine”

**Type, according to USR:**

Mandatory

**Level of education:**

Master degree (M)

**Form of education:**

Lectures and practical courses.

**Course of education:**

3rd course

**Semesters of education:**

5th semester

**Auditorium classes:**

15 hours lectures, 30 hours practical courses

**Technical equipment applied in the training:**

Models, visual boards, materials for conducting the discipline-specific classes (individual protective equipment, equipment for indication of harmful substances, video database). At the disposal of teachers and students there are two sets of audiovisual equipment, multifunctional device, two laptops, internet access.

**Training methods:**

Multimedia presentations, discussions, practical problem solving.

**Evaluation:**

Test and written exam.

**Final grade:**

The following components (K) take part in the formation of the final grade:

1. Evaluation from the colloquium (K1) with a coefficient of significance 0.2.
2. Evaluation from the final test (K2) with a coefficient of significance 0.3.
3. Evaluation from the final exam (K3) with a coefficient of significance 0.5.

Final score = (K1 X 0.2) + (K2 X 0.3) + (K3 X 0.5)

If one of the components of the final grade is poor (2), then the final grade is also poor (2).

**Additional grading:**

Based on participation and involvement in the educational process (lectures, practical classes and discussions).

**Colloquium:**

Yes (test).

**State exam:**

No

**Leading lecturer:**

Professor with D.Sc. degree in Disaster Medicine

**Department:**

„Epidemiology and disaster medicine”

## ANNOTATION

National and international research have presented constant increase both in number and severity of disastrous events during the recent years. The specific nature of these events is the reason for the establishment of a relatively new field in the public healthcare – Disaster Medicine. This medical specialty has interdisciplinary character and specific subject-matter, objectives, tasks and principles.

The focus is on organizational aspects – what healthcare system structure and operating procedures are required for prevention and prompt medical support to the affected population in case of disaster occurrence.

Solving the challenges that disasters create for the healthcare requires the acquisition of a certain level of knowledge and practical skills by the medical professionals that have to be acquired in the medical universities. This is the objective that all the contents of this course complies with.

## **BASIC TASKS**

1. To discuss with students all the aspects of natural and anthropogenic disasters and their impact on the population health.
2. To analyze the relation between the disaster type and the specific features and treatment methods of the predicted injuries
3. To prepare students for effective and adequate disaster medical planning, organization and management.
4. To develop an user-friendly algorithm for prophylaxis of the damages, illnesses and epidemics, to be implemented by the medical professionals in case of disaster.
5. To conduct theoretical and practical disaster medicine education.

## **EXPECTED RESULTS**

### **Theoretical knowledge – thorough understanding of:**

- Disasters' damaging factors impact, characteristics of the damages, medical aid and treatment of disasters' casualties.
- Disaster medicine as general medical specialty, organization of medical and rescue operations in disasters.
- Disaster medical support as unity of medical intelligence, triage, stabilization, evacuation and treatment of the casualties. Standard operating procedures.
- Types of areas of damage and their unique considerations.
- Personal and collective protective equipment.
- Methods and means for prophylaxis and protection in order to decrease and eradicate the damaging factors impact on human health.
- Hygienic and anti-epidemic support to the affected population and area of damage.

### **Practical skills:**

- To solve situational task on a given disaster;
- To work in small groups on a given task and to make independent decisions;
- Discuss on possible managerial solutions;
- To analyze and solve cases with gradual increase in the difficulty;
- To develop practical approach for fast and correct problem solving;
- To choose the most appropriate approach to the situation and to defend the choice

## **LECTURES**

### ***LECTURE № 1 – 2 hours***

#### **Disasters and Disaster Medicine.**

### ***LECTURE № 2 – 2 hours***

#### **Disaster Medical Support Management, Planning for DMS.**

***LECTURE № 3 – 2 hours***

**Toxicology, classification of the chemical agents, chemical weapons, ACD management.**

***LECTURE №4 – 2 hours***

**Radiation, ionizing radiation, dosimetry, ARD management.**

***LECTURE № 5 – 2 hours***

**Acute radiation syndrome, radio-dermatitis.**

***LECTURE № 6 – 2 hours***

**ABD, biological weapons, sanitary control.**

***LECTURE № 7 – 3 hours***

**War and terrorism as disasters, psychological disorders in disasters.**

**PRACTICAL CLASSES**

***PRACTICAL CLASS № 1 – 2 hours***

**Area of damage.**

***PRACTICAL CLASS № 2 – 2 hours***

**Disaster Relief to population – organization, structure, actors. Crisis HQ.**

***PRACTICAL CLASS № 3 – 2 hours***

**Disaster Medical Support.**

***PRACTICAL CLASS № 4 – 2 hours***

**Medical intelligence. Triage.**

***PRACTICAL CLASS № 5 – 2 hours***

**First Aid and Medical Aid.**

***PRACTICAL CLASS № 6 – 2 hours***

**Evacuation. Medical teams. Tasks. Temporary medical station establishment.**

***PRACTICAL CLASS № 7 – 2 hours***

**Toxicology of Organophosphates, Chlorine and CO.**

***PRACTICAL CLASS № 8 – 2 hours***

**First aid.**

***PRACTICAL CLASS № 9 – 2 hours***

**Triage.**

***PRACTICAL CLASS № 10 – 2 hours***

**Toxicology of Cyanides and Ammonia.**

***PRACTICAL CLASS № 11 – 2 hours***

**Earthquakes.**

***PRACTICAL CLASS № 12 – 2 hours***

**Medical Management of Fires.**

***PRACTICAL CLASS № 13 – 2 hours***

**Mass Population Movement Medical Management.**

Definition. Characteristics. Damaging factors. Refugees. Status of refugee. Migrants.

***PRACTICAL CLASS № 14 – 2 hours***

**Medical Management of ATD and Combined AOD.**

***PRACTICAL CLASS № 15 – 2 hours***

**Seminar Medical Support to the Affected Population in Case of Disasters.**

### **DISASTER MEDICINE QUESTIONNAIRE**

1. Disasters – Definition, Classification, Principles
2. Disasters – Definition, Development Stages, Response Types
3. Disasters – Definition, Damaging Factors, Impact on Medical Support
4. Disaster Medicine – Definition, Objective, Tasks
5. Disaster Medicine – Definition, Principles, Terminology
6. Area of Damage – Definition, Types, Elements, Characteristics
7. Medical Losses - Definition, Classification
8. Disasters' Relief to population – Definition, Objective, Tasks
9. Disasters' Relief to population - Organization, Actors, Unified Rescue System, Crisis HQ
10. Disasters' Medical Support – Definition, Objective, Principles, Tasks

11. Disaster Medical Support - Organization, Stages, Levels, Actors
12. Medical Intelligence
13. Triage
14. First Aid
15. Medical First Aid
16. Medical Evacuation
17. Planning for Disaster Medical Support
18. Management of Disaster Medical Support
19. Medical Teams Tasks in Disaster Medical Support
20. Temporary Medical Station
21. Earthquake. Disaster Medical Support Management
22. Floods. Disaster Medical Support Management
23. Wars. Disaster Medical Support Management
24. Terrorism. Disaster Medical Support Management
25. Mass Humans Movement. Disaster Medical Support Management
26. Fires. Disaster Medical Support Management
27. Radiology. Radiation – Definition, Emissions' Types, Characteristics
28. Radiology. Ionizing radiation – Measurement, Units, Effects – Determinative, Stochastic
29. Radiology. Radiological Incident – Damaging Factors, Disaster Medical Support Management
30. Radiology. Nuclear Bomb Damaging Factors. Disaster Medical Support Management
31. Acute Radiation Syndrome - Definition, Stages, Clinical Features
32. Acute Radiation Syndrome - Treatment, Complications. Radio-dermatitis
33. Area of radiation damage management. Radiation injured patient management
34. Area of biological damage – Characteristics, Medical Activities for Localization and Eradication
35. Sanitary control
36. Area of Chemical Damage – Characteristics, Medical Activities for Localization and Eradication
37. Toxic Industrial Materials – Ammonia – Characteristics, Medical Activities
38. Toxic Industrial Materials – Chlorine – Toxicology, Characteristics, Medical Activities
39. Cyanides – Toxicology. Characteristics, Medical Activities
40. Organophosphorus compounds – Toxicology. Characteristics, Medical Activities
41. Carbon Monoxide – Characteristics, Toxicology, Medical Activities
42. Blistering Agents. Characteristics, Toxicology, Medical Activities
43. Riot Control Agents. Characteristics, Toxicology, Medical Activities
44. Disasters Psychological Disorders
45. Weapons of Mass Destruction. Types, Characteristics, Medical Activities if Implemented
46. Decontamination

## REFERENCE

1. Disaster Medicine - Comprehensive Principles and Practices. 2nd Edition. Kristi L. Koenig & Carl H. Schultz. 2016 - Cambridge University Press
2. Ciottone's Disaster Medicine (Second Edition)

3. Edited by: Gregory R. Ciottone, Paul D Biddinger, Robert G. Darling, Saleh Fares, Mark e Keim, Michael S Molloy, Selim Suner ISBN: 978-0-323-28665-7
4. Oxford American Handbook of Disaster Medicine (Oxford American Handbooks of Medicine) 1st Edition
5. Edited by Robert A. Partridge, Lawrence Proano, David Marcozzi, Alexander G. Garza, Ira Nemeth, Kathryn Brinsfield, Eric S. Weinstein
6. Disaster Medicine Edited by: David E Hogan and Jonathan Burstein PDF READ on <https://sites.google.com/site/inemnaghtsrsoal/pdf-read-disaster-medicine-new-e-book---by-david-e-hogan>
7. Kostadinov R. 600 Simple Steps for Disaster Medicine Exam Success. ISBN: 978-954-8326-56-8
8. Kostadinov R. Disaster Medicine Sample Tests. VAP, Plovdiv, 2012
9. Kostadinov R. Disaster Medicine Highlights. LaxBook, Plovdiv, 2018