



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal - 500 043, Hyderabad, Telangana

## COURSE CONTENT

| DISASTER MANAGEMENT                               |          |                             |   |                               |         |                          |     |       |
|---|----------|-----------------------------|---|-------------------------------|---------|--------------------------|-----|-------|
| II Semester: MBA                                  |          |                             |   |                               |         |                          |     |       |
| Course Code                                       | Category | Hours / Week                |   |                               | Credits | Maximum Marks            |     |       |
| CMBD23  | Elective | L                           | T | P                             | C       | CIA                      | SEE | Total |
|   |          | 3                           | 0 | -                             | 3       | 40                       | 60  | 100   |
| <b>Contact Classes: 40</b>                        |          | <b>Tutorial Classes: 00</b> |   | <b>Practical Classes: Nil</b> |         | <b>Total Classes: 40</b> |     |       |
| <b>Prerequisite: Basic concepts of management</b> |          |                             |   |                               |         |                          |     |       |

### I. COURSE OVERVIEW:

Disaster Management course imparts knowledge related to the disaster including preparedness, mitigation and rehabilitation. Disaster Management helps in the time of emergency, natural calamity and man-made calamity. This course reduces the potential losses from hazards, assure prompt and appropriate assistance to the victims of a disaster, and achieve a rapid and effective recovery.

### II. COURSES OBJECTIVES:

#### The students will try to learn:

- I. The specific contributions of the Red Cross/Red Crescent movement to the practice and conceptual understanding of disaster management and humanitarian response and their significance in the current context
- II. Develop an understanding of standards of humanitarian response and practical relevance in specific types of disasters and conflict situations
- III. The strengths and weaknesses of disaster management approaches, planning and programming in different countries, particularly their home country
- IV. Recognize issues, debates and challenges arising from the nexus between paradigm of development and disasters.

### III. COURSE OUTCOMES:

#### At the end of the course students should be able to:

- CO1 Outline the disaster management concepts to reduce the risks and consequences.
- CO2 Discuss various aspects of emergencies and society's role for disaster communication to get an immediate response
- CO3 Analyze the concept of disaster communication for experiences of the international disaster management efforts.
- CO4 Demonstrate the critical analysis of international disaster management and identify gaps that improve strong coordination.
- CO5 Recognize Disaster Administration to reduce the vulnerability of the disaster
- CO6 Apply the scientific tools of disaster management to prevent the risk involved in natural disasters.

#### **IV. COURSE CONTENT:**

##### **MODULE - I: TYPES, TRENDS, CAUSES, CONSEQUENCES AND CONTROL OF DISASTERS (08)**

Geological Disasters (earthquakes, landslides, tsunamis, mining); Hydro-Meteorological Disasters (floods, cyclones, lightning, thunder-storms, hail storms, avalanches, droughts, cold and heat waves); Biological Disasters (epidemics, pest attacks, forest fire); Technological Disasters (chemical, industrial, radiological, nuclear) and Manmade Disasters (building collapse, rural and urban fire, road and rail accidents, nuclear, radiological, chemicals and biological disasters); Global Disaster Trends – Emerging Risks of Disasters – Climate Change and Urban Disasters.

##### **MODULE - II: DISASTER MANAGEMENT CYCLE AND FRAMEWORK (10)**

Disaster Management Cycle – Paradigm Shift in Disaster Management Pre-Disaster – Risk Assessment and Analysis, Risk Mapping, Prevention and Mitigation of Disasters, Early Warning System; Preparedness, Capacity Development; Awareness During Disaster – Evacuation – Disaster Communication – Search and Rescue – Emergency Operation Centre – Incident Command System – Relief and Rehabilitation – Post-disaster – Damage and Needs Assessment, Restoration of Critical Infrastructure – Early Recovery – Reconstruction and Redevelopment.

##### **MODULE - III: INTERNATIONAL DISASTER MANAGEMENT EXPERIENCE (09)**

International Disaster Management Experience: International disaster management efforts during Spanish Flu (1918), Tsunamis (2004) and COVID (2019). The Cuban Model of Hurricane Risk Management, Japan's Emergency Management and response System. Bangladesh multi-hazard risk reduction Model. Critical analysis of International disaster management experience- identifying gaps and best practices.

##### **MODULE - IV: DISASTER ADMINISTRATION (10)**

Disaster Administration: United Nations and its Disaster Management Mechanism UNDP, UNDRR, WHO. Disaster Administration in India: Disaster Management Authority at National, State and District levels; Allied governmental bodies, institutions and mechanisms/resources for Disaster Management; State and National Disaster Mitigation Funds. Gaps in Disaster Policy and Administration

##### **MODULE - V: APPLICATIONS OF SCIENCE AND TECHNOLOGY FOR DISASTER MANAGEMENT (08)**

Geo-informatics in Disaster Management (RS, GIS, GPS and RS) Disaster Communication System (Early Warning and Its Dissemination) Land Use Planning and Development Regulations Disaster Safe Designs and Constructions Structural and Non-Structural Mitigation of Disasters S&T Institutions for Disaster Management in India.

#### **V. TEXTBOOKS:**

1. Rivera, Jason D., ed. "Disaster and Emergency Management Methods: Social Science Approaches in Application", Routledge, 8<sup>th</sup> edition, 2021.
2. Kapoor, Mukesh. "Disaster management", Saurabh Publishing House, 6<sup>th</sup> edition, 2020.
3. Elvas, Luís B., "Disaster Management in Smart Cities", Smart Cities, 4<sup>th</sup> edition, 2021.
4. D.R Khullar, "Environment & Disaster Management", 3<sup>rd</sup> edition, 2021.
5. Brebbia, C. A., ed. "Disaster Management", WIT Press, 6<sup>th</sup> edition, 2018.
6. Frumkin, Howard, ed. "Environmental health: from global to local", John Wiley & Sons, 11<sup>th</sup> edition, 2016.
7. Encyclopedia of Disasters – Environmental Catastrophes and Human Tragedies, Vol. 1 & 2, Angus M. Gunn, Greenwood Press, 2008.
8. Encyclopedia of disaster management, Vol I, II and III Disaster management policy and administration, S L Goyal, Deep & Deep, New Delhi, 2006.

## VI. REFERENCE BOOKS:

1. Manual on natural disaster management in India, M C Gupta, NIDM, New Delhi
2. R K Bhandani, "An overview on natural & man-made disasters and their reduction", CSIR, New Delhi
3. World Disasters Report, International Federation of Red Cross and Red Crescent, Switzerland, 2009.
4. Coppola D P, "Introduction to International Disaster Management", Elsevier Science (B/H), London, 2007.
5. Disasters in India Studies of grim reality, Anu Kapur & others, 2005, 283 pages, Rawat Publishers, Jaipur.
6. Management of Natural Disasters in developing countries, H.N. Srivastava & G.D. Gupta, Daya Publishers, Delhi, 2006, 201 pages.
7. H. K. Gupta (Ed) Disaster Management, Universities Press, 2<sup>nd</sup> edition, 2003.
8. R. B. Singh (Ed) Disaster Management, Rawat Publication, 1<sup>st</sup> edition, 2000.

## VII. Web References:

1. [http://ndmindia.nic.in/disaster\\_management\\_in\\_india\\_09052017.pdf](http://ndmindia.nic.in/disaster_management_in_india_09052017.pdf)
2. <http://epdfiles.engr.wisc.edu/dmcweb/AA02AimandScopeofDisasterManagement.pdf>

## VIII. E-Text Books:

1. [https://www.iare.ac.in/sites/default/files/lecture\\_notes/dm%20notes.pdf](https://www.iare.ac.in/sites/default/files/lecture_notes/dm%20notes.pdf)
2. <http://www.cbse.nic.in/natural%20hazards%20&%20disaster%20management.pdf>
3. <http://196.223.158.148/bitstream/handle/123456789/619/Improving%20Disaster%20Management.pdf?sequence=1&isAllowed=y>
4. [https://books.google.co.in/books?hl=en&lr=&id=s6oxEraqWWwC&oi=fnd&pg=PP1&dq=disaster+MANAGEMENT&ots=tTefaw793r&sig=2SXMNkQHRieKkXn4dLFRg0ljkQY&redir\\_esc=y#v=onepage&q=disaster%20MANAGEMENT&f=false](https://books.google.co.in/books?hl=en&lr=&id=s6oxEraqWWwC&oi=fnd&pg=PP1&dq=disaster+MANAGEMENT&ots=tTefaw793r&sig=2SXMNkQHRieKkXn4dLFRg0ljkQY&redir_esc=y#v=onepage&q=disaster%20MANAGEMENT&f=false)
5. <https://www.mdpi.com/2624-6511/4/2/42>