



# UNIVERSITY OF JAMMU

(NAAC ACCREDITED 'A' GRADE' UNIVERSITY)  
(Baba Sahib Ambedkar Road, Jammu-180006 (J&K))

Academic Section

Email: [academicsectionju14@gmail.com](mailto:academicsectionju14@gmail.com)

## NOTIFICATION

(24/Sept. /Adp/ 73)

It is hereby notified for the information of all concerned that the Vice-Chancellor, in anticipation of the approval of the Competent Bodies, is pleased to authorize the following:-

- I. Introduction of Master Degree Programme in Disaster Management under Non Choice Based Credit System and Bachelor of Arts in Disaster Management under Non Choice Based Credit System for Army Personnel at High Altitude Warfare School (HAWS), Gulmarg from the session 2024-2025 onwards;
- II. Adoption of Statutes and Scheme for Master Degree Programme in Disaster Management under Non Choice Based Credit System (**Annexure-I**) and Bachelor of Arts in Disaster Management under Non Choice Based Credit System (**Annexure-II**) for Army Personnel at High Altitude Warfare School (HAWS), Gulmarg; and
- III. Adoption of Syllabi and Courses of Studies of Bachelor of Arts in Disaster Management of Semester I, II, III, IV, V and VI under Non Choice Based Credit System (**as given in the Annexure-III**) and Master Degree Programme for semesters I, II, III and IV under Non Choice Based Credit System (**as given in the Annexure-IV**) for the examinations to be held in the years indicated against each semester as under:-

Subject	Semester	For the examinations to be held in the year
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**Disaster Management (Bachelor of Arts)**

Semester-I	December 2024, 2025 and 2026
Semester-II	May 2025, 2026 and 2027
Semester-III	December 2025, 2026 and 2027
Semester-IV	May 2026, 2027 and 2028
Semester-V	December 2026, 2027 and 2028
Semester-VI	May 2027, 2028 and 2029

**Disaster Management (Master Degree Programme)**

Semester-I	December 2024, 2025 and 2026
Semester-II	May 2025, 2026 and 2027
Semester-III	December 2025, 2026 and 2027
Semester-IV	May 2026, 2027 and 2028

The Syllabi of the courses are available on the University website:  
[www.jammuuniversity.ac.in](http://www.jammuuniversity.ac.in).

Sd/-

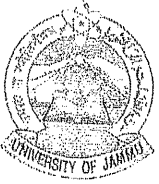
DEAN ACADEMIC AFFAIRS

No. F. Acd/II/24/ 9843-67

Dated: 9/9/2024

Copy for information and necessary action to:

1. Dean, Faculty of Science
2. Convener, Board of Studies in Geology



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3. Sr. P.A. to the Controller of Examinations
4. All members of the Board of Studies
5. Confidential Assistant to the Controller of Examinations
6. I/C Director, Computer Centre, University of Jammu
7. Programmer, Computer Section, Examination Wing
8. Deputy Registrar/Asst. Registrar (Conf. /Exam. UG/Exam. PG/Exam. Non.Prof)
9. Incharge, University Website for Uploading of the notification

*Sumitasharma*  
Deputy Registrar (Academic) 5/9/2024  
*SS* 4/9/24  
*NP* 4/9/24

**DISASTER MANAGEMENT CENTRE  
DEPARTMENT OF GEOLOGY  
UNIVERSITY OF JAMMU, JAMMU**

**SCHEME FOR GRADUATION COURSE (BACHELOR OF ARTS) IN  
DISASTER MANAGEMENT UNDER NON-CHOICE BASED CREDIT  
SYSTEM FOR ARMY PERSONNEL AT HIGH ALTITUDE WARFARE  
SCHOOL (HAWS), GULMARG**

*Three Year Degree Programme in Disaster Management*

**DISASTER MANAGEMENT CENTRE  
DEPARTMENT OF GEOLOGY  
UNIVERSITY OF JAMMU, JAMMU**

**Scheme for Graduation (Bachelor of Arts) in Disaster Management under Non-Choice Based Credit System for Army Personnel at High Altitude Warfare School (HAWs)**

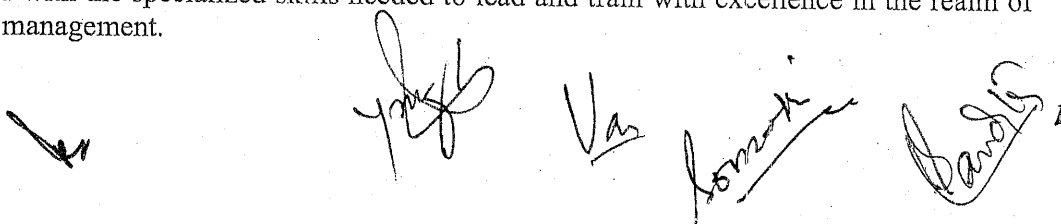
**1. Introduction:**

The University of Jammu and High Altitude Warfare School of Army at Gulmarg have entered into MoU for technical advancement and progression of Army personnel and university students and faculty members specifically in the discipline of high altitude studies and disaster management in mountainous regions. The MOU envisioned that University of Jammu shall offer certificate, diploma, undergraduate and postgraduate degree courses to the trainees and officers (instructors) of HAWs giving due weightage to their experiential learning. The Certificate and Diploma courses for the HAWs trainees have been approved and six courses have been completed till date. The Disaster Management Centre of Geology Department has formulated three skill based certificate courses in Disaster Management on rock craft and mountain rescue; Search, rescue and survival and Snow craft and avalanche rescue for the students of Jammu University. The training of local youth and volunteer students by the instructors of HAWs in their training centres in Kashmir shall help in imparting special skills to the students and developing trained manpower for rescue work during an eventuality. These courses will aid in developing the skills of learners to get self-employment by planning different adventure sports and camps and also help to enhance the unexplored adventure sports of the Jammu region.

The Graduation (Bachelor of Arts) Course in Disaster Management at the High-Altitude Warfare School (HAWs) is designed for serving army personnel with specialized skills and well-prepared individuals capable of leading and coordinating effective disaster response efforts in challenging environments. Recognizing the unique requirements of military operations in such terrains, this program combines disaster management principles with military expertise to enhance the capabilities of army personnel in handling emergencies. The course shall be run by the Disaster Management Centre, Department of Geology, University of Jammu in hybrid mode.

**2. Objective:**

The primary objective of the Graduation in Disaster Management Course at HAWs is crafted with the primary objective of acknowledging and enhancing the commendable efforts of army personnel/ instructors with advanced skills in disaster response, recovery, and management specific to high-altitude and complex terrains. The program aims to recognize and further elevate the critical role played by army instructors in preparing military personnel for effective disaster response in demanding environments. Through this course, we seek to underscore the dedication and hard work of these instructors, ensuring they are equipped with the specialized skills needed to lead and train with excellence in the realm of disaster management.



### *Three Year Degree Programme in Disaster Management*

#### **3. Methodology:**

The Graduation course employ a combination of theoretical lectures, practical exercises, case studies, simulations and teaching experience gained by army personnel during their tenure as instructors at HAWS. Military training methodologies are integrated to ensure realistic and effective disaster response training. Participants engage in hands-on exercises, field visits, to reinforce learning by teaching.

#### **4. Eligibility For Admission: 10+2 Passed or its equivalent**

#### **5. Duration of the Programme: 3 Years**

#### **6. Intake Capacity: All service personnel/-instructors who are posted or have served at HAWS shall be eligible to apply for the admission in the undergraduate course.**

#### **7. Medium of Instruction: English**

#### **8. Fee Structure\*:**

SNo	Fee Type	Amount
1	Enrolment Fee (To be retained by the Dept.)	Rs. 500
2	Admission Fee (To be deposited in Univ. Chest)	Rs. 530
2	Registration Fee (To be remitted to the Examination Wing)	Rs. 440
3	Inter-University Migration Fee ( To be remitted to the Examination Wing)	Rs. 980
4	Examination Fee (At the start of every semester), (To be remitted to the Examination Wing)	Rs. 960
5	Degree Fee (To be remitted to the Examination Wing)	Rs. 980

\* The amount of Fee shall be as per the University notifications issued from time to time.

#### **9. Teaching: The teaching in the UG courses shall be conducted in hybrid mode. The theory classes shall be engaged by the faculty members of the University of Jammu and the Officers (former and currently posted) of HAWS physically at HAWS or through online mode.**

#### **10. Scheme of Examination: The examination pattern is designed to ensure a balanced assessment, incorporating both continuous evaluation and a comprehensive end-of-semester examination. The NEP encourages a holistic approach to education, including practical applications, interdisciplinary learning, and the development of critical thinking skills. Therefore, practical components, field visits, and experiential learning shall be integrated into the program where ever feasible.**

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### *Three Year Degree Programme in Disaster Management*

The theory examination in all courses shall be of **80% of total marks** whereas the continuous assessment shall comprise of **20%** of total marks in all courses except courses on Experiential Learning (DM-104, DM-204, DM-304, DM-404, DM-504, DM-604) where the marks shall be awarded based on the performance during the practical training. The question paper in theory shall comprise of four questions of **20** marks each with internal choice and the time allotted shall be three hours.

**End Semester Examination (ESE):** This is a comprehensive examination at the end of each semester, testing the students' knowledge, critical thinking, and application of concepts learned during the semester. All the admitted candidates have to submit their examination forms at the start of every semester and submit the requisite examination fee. The end Semester Examination shall be held at HAWS itself in order to prevent unnecessary move of Army instructors which would hamper the training of Army personnel undergoing Mountain Warfare & Winter Warfare courses at HAWS. Post End Semester Examination, the answer sheets will be sent to Jammu University for evaluation under strict vigilance.

Course structure for **Graduation in Disaster Management** is attached as **Appendix 'A'**.

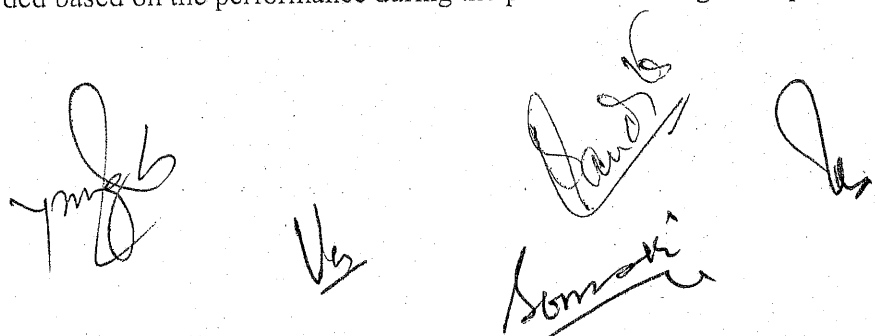
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**PROGRAMME STRUCTURE FOR AWARD OF BACHELOR OF ARTS DEGREE IN  
DISASTER MANAGEMENT FOR HAWS PERSONNEL UNDER NON-CBCS**

**COURSE STRUCTRE**

COURSE NO	COURSE TITLE	Marks	CREDITS
<b>SEMESTER I</b>			
DM-101	Introduction to Disaster Management	100	4
DM-102	Disaster Management Structure in India	100	4
DM-103	Understanding of Hazards & Disasters	100	4
DM-104	Experiential Learning and Practical Training in Mountain Skills and Techniques	200	12
<b>SEMESTER II</b>			
DM-201	Natural Disasters	100	4
DM-202	Anthropogenic Disasters	100	4
DM-203	Disaster Management Cycles	100	4
DM-204	Experiential Learning and Practical Training in Advanced Ice Climbing and Rescue Techniques	200	12
<b>SEMESTER III</b>			
DM-301	Warfare and Technological Disasters	100	4
DM-302	Role of Geology in Disaster Management	100	4
DM-303	Disaster Management and Climate Change	100	4
DM-304	Experiential Learning and Practical Training in Snow Operations and Safety Training	200	12
<b>SEMESTER IV</b>			
DM-401	Information Technology in Disaster Management	100	4
DM-402	Comprehensive Risk Assessment Strategies	100	4
DM-403	Emerging Technologies in Disaster Management	100	4
DM-404	Experiential Learning and Practical Training in Advanced Mountain Skills and Rescue Techniques	200	12
<b>SEMESTER V</b>			
DM-501	Medical Emergency & Casualty Management	100	4
DM-502	Disaster Resilience	100	4
DM-503	Preparedness in Disaster Management	100	4
DM-504	Experiential Learning and Practical Training in Outdoor Survival and Tactical Combat Proficiency	200	12
<b>SEMESTER VI</b>			
DM-601	Role of Armed Forces in Disaster Management	100	4
DM-602	Role of Civil agencies in Disaster Management	100	4
DM-603	Yoga for stress Management	100	4
DM-604	Experiential Learning and Practical Training in Emergency Response and Safety Procedures in Challenging Environments	200	12

**NOTE:** The theory examination in all courses shall be of 80% of total marks whereas the continuous assessment shall comprise of 20% of total marks in all courses except courses on Experiential Learning (DM-104, DM-204, DM-304, DM-404, DM-504, DM-604) where the marks shall be awarded based on the performance during the practical training. The question



## *Three Year Degree Programme in Disaster Management*

paper in theory shall comprise of four questions of 20 marks each with internal choice and the time allotted shall be three hours.

### SEMESTER I

#### DETAILED SYLLABUS

**Course No.:** DM-101

**Credits:** 04

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2024, 2025 & 2026**

**Title:** Introduction to Disaster Management

**Duration of Examination:** 3 hours

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of "Introduction to Disaster Management" course is to provide foundational knowledge on disasters. It covers types, causes, impacts, risk assessment, emergency planning, and crisis communication.

#### **Unit 1: Understanding the Concept of Disaster Management**

Definition and key concepts of disasters management, Historical context and evolution of Disaster Management, Importance of Disaster Management, Characteristics and components of disasters, saving lives and minimizing injuries, protecting property and infrastructure, ensuring environmental conservation, Promoting social and economic stability.

#### **Unit 2: Disaster Management Phases**

Overview of the disaster management phases (mitigation, preparedness, response, recovery), Importance of each phase in disaster management, Strategies and approaches for each phase of disaster management, Case studies illustrating the disaster management phases.

#### **Unit 3: Trends in Disaster Management**

Evolution of Disaster Management practices, Historical approaches in disaster management, Modern strategies in disaster management, Technological advancements and their impact on disaster management.

#### **Unit 4: Challenges and Impacts of Disasters**

Key Challenges in Disaster Management, Preparedness for various challenges and their impacts Importance of Awareness for Disaster Challenges and its Impacts, Resource allocation and mobilization, Legal and institutional frameworks, Policy implementation and enforcement

#### **Books Recommended**

Introduction to Disaster Management by B. H. Harshavardhan.

1. Basics of Disaster Management by NIDM.
2. Disaster Management: A Developmental Approach by Amita Singh- Focuses on integrating disaster management with developmental planning in India.
3. Handbook of Disaster Research edited by Havidán Rodríguez, William Donner, and Joseph E. Trainor.



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4. National Disaster Management Guidelines by National Disaster Management Authority (NDMA), Government of India
5. Disaster Management by Harsh K. Gupta
6. Disaster Management: A Disaster Manager's Handbook by A. D. S. Gill
7. Standard Operating Procedures for Responding to Natural Disasters-(NDMA)
8. National Policy on Disaster Management- (NDMA)

**Course No.:** DM-102

**Credits:** 04

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2024, 2025 & 2026**

**Title:** Disaster Management Structure in India

**Duration of Examination:** 3 hours

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one question from each unit. Each question carries 20 Marks.

**Objective:** The objective of studying the Disaster Management Structure in India is to understand the organizational framework and policies for managing disasters. It examines the roles of government agencies, coordination mechanisms, legal frameworks, and resource management strategies. This study provides insights into India's disaster preparedness and resilience-building efforts.

#### **Unit 1: Legislative and Policy System**

Overview of disaster management laws in India, Disaster Management Act (2005), National Disaster Management Plan (2016), Key provisions and mandates, Roles and responsibilities of authorities, Implementation challenges.

#### **Unit 2: Roles and Responsibilities of Stakeholders**

Key roles of National, State, and Local level stakeholders, Government agencies, Importance of NGOs, and community-based organizations, Capacity building and training, Institutional mechanisms for coordination, Communication channels and protocols.

#### **Unit 3: Multi-Sectoral Collaboration**

Importance of collaboration across sectors, Benefits of multi-sectoral approaches, Importance of collaboration across sectors, Challenges in multi-sectoral collaboration, Strategies for fostering collaboration.

#### **Unit 4: Challenges and Opportunities**

Implementation challenges in disaster risk reduction, Institutional and operational challenges, Financial and resource constraints, Social and cultural barriers, Strategies to overcome challenges, Policy and planning integration, international cooperation and knowledge sharing.

#### **Books Recommended:**

1. Disaster Management in India: Challenges and Strategies by R. B. Singh and Krishna Kumar.

## *Three Year Degree Programme in Disaster Management*

2. Emerging Trends in Disaster Management: Lessons from India edited by P. G. Dhar Chakrabarti and P. S. Ramkumar.
3. Disaster Management in India by Vinod K. Sharma.
4. Earthquake Disaster Management in India by R.K. Bhandari.
5. Natural Disaster Management in India by Anu Kapur.

**Course No.:** DM-103

**Credits:** 04

**Title:** Understanding of Hazards & Disasters

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2024, 2025 & 2026**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one question from each unit. Each question carries 20 Marks.

**Objective:** The objective of "Understanding of Hazards & Disasters" is to provide comprehensive knowledge about different hazards and their potential to cause disasters. This understanding aids in risk assessment, mitigation strategies, and effective disaster management.

### **Unit 1: Introduction to Hazards and Disasters**

Introduction to Hazards and Disasters, Exploring the fundamentals of hazards and disasters, Components of hazards and disasters; Differentiating between natural and human-made risks, analyzing various types of hazards, Understanding the impacts on communities and ecosystems of hazards and disasters, Fundamental principles and theories underlying hazards and disasters.

### **Unit 2: Techniques for Identifying and Assessing Hazards**

Hazard identification methods, Risk assessment techniques and their Uses, Types of Vulnerability mapping and Risk modelling, Historical data analysis for hazard assessment; Techniques and tools for identifying potential hazards; Field surveys, remote sensing, and community-based approaches; Role of historical data and scientific research in hazard identification.

### **Unit 3: Case Studies and Real-World Examples**

Application of lessons learned from past disasters, Case studies: Examples from both natural and human-made disasters, Understanding the practical implications of past events on disaster management strategies, Role of interdisciplinary approaches in disaster risk reduction. Detailed examination of specific case studies; How past events shape current policies and practices; Role of policy changes and innovations in disaster management; Success stories and areas for improvement.

### **Unit 4: Leveraging Technological Advancements in Disasters**

Use of technology in disaster management: Importance of technological help, Geographic Information Systems (GIS), Early warning systems and real-time monitoring, Weather forecasting system, Integration of technology in planning and policy development; Role of weather forecasting in disaster preparedness and response; Case studies illustrating the impact

### *Three Year Degree Programme in Disaster Management*

of weather forecasting on disaster management; Examples of technology-driven policy changes and initiatives.

#### **Books Recommended:**

1. Understanding Natural Geohazards: Insights into natural geohazards and strategies for sustainable development by Singh and Haq.
2. Understanding Hazards and Disasters: An Indian Perspective by V. K. Sharma and A. K. Gupta.
3. Natural Hazards and Disaster Management: Case Studies from India" by M. L. Sharma and R. P. Singh.
4. Hazards and Disaster Management in India by V. Suresh and S. C. Gupta.
5. Disaster Management: Approaches and Strategies by Harsh K. Gupta
6. National Disaster Management Guidelines by National Disaster Management Authority (NDMA), India
7. Standard Operating Procedures for Responding to Natural Disasters-(NDMA)
8. National Policy on Disaster Management- (NDMA)

**Course No.:**DM-104

**Title:** Experiential Learning and Practical Training in Mountain Skills and Techniques

**Credits:** 12

**Maximum Marks:** 200

**Examination to be held in the year** 2024, 2025 & 2026

**Note:** The evaluation of this course shall be based on continuous assessment during the practical training on various aspects of disaster management being imparted during the course of study. The concerned teachers/ instructors shall keep a daily record of performance of the trainees and award marks as per their punctuality, understanding and performance during the practical sessions.

**Objective:** The objective of "Experiential Learning and Practical Training in Mountain Skills and Techniques" is to equip students with hands-on experience and practical skills necessary for safely navigating and surviving in mountainous environments. This includes training in climbing, trekking, first aid, navigation, and understanding mountain weather patterns.

#### **Unit 1: Mountain Endurance and Rock Craft Equipment**

Introduction to rock craft equipment, Types, uses, and maintenance of rock craft equipment, Techniques and training for mountain endurance, advanced techniques in mountain endurance and rock craft.

#### **Unit 2: Knots & Hitches, Bouldering, and Anchoring**

Introduction knots and hitches, Types of knots and hitches: Bowline, figure-eight, clove hitch, etc., Bouldering techniques and safety measures, Anchoring methods and their importance in climbing.

#### **Unit 3: Belaying, Free Climbing, and Route Selection**

Concept of belaying, free climbing, Top-rope and lead belaying techniques, Basics of free climbing and maintaining balance, Criteria for selecting and planning climbing routes.

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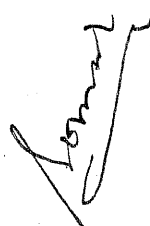
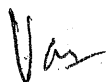
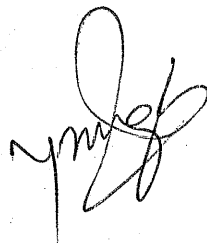
## *Three Year Degree Programme in Disaster Management*

### **Unit 4: Rope Techniques, Stream Crossing, and Skiing**

Rope fixing techniques, ascending techniques on fixed ropes, Stream crossing methods and safety, Introduction to ski equipment and techniques, advanced skiing techniques.

#### **Books Recommended:**

1. Mountain Hazards and Disaster Risk Reduction: An Indian Perspective edited by Ajay K. Naik and Sudhir K. Thakur.
2. Disaster Management in the Himalayas by Prakash C. Sharma.
3. Mountaineering First Aid: A Guide to Accident Response and First Aid Care by Jan Carline.
4. Johnson, L. (2004). An introduction to mountain search and rescue. Emergency Medicine Clinics, 22(2), 511-524.



**SEMESTER II**

**DETAILED SYLLABUS**

**Course No.:** DM-201

**Title:** Natural Disasters

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2025, 2026 & 2027**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of "Introduction to Natural Disasters" is to provide students with a foundational understanding of the various types of natural disasters, such as earthquakes, floods, hurricanes, and volcanic eruptions. The course aims to explore the causes, characteristics, and impacts of these events, along with strategies for prediction, preparedness, and mitigation.

**Unit 1: Introduction to Natural Disasters**

Overview of various natural disasters, Different types of natural disasters, Concepts including causes, frequency, and distribution patterns of natural disasters, Geological, atmospheric, and hydrological processes underlying each disaster type, Physical mechanisms responsible for natural disasters, Factors influencing their intensity and impact.

**Unit 2: Environmental and Economic Consequences**

Analysis of the environmental consequences of natural disasters, Economic impacts and the importance of risk assessment, Vulnerability analysis and its role in disaster preparedness, Emergency response strategies and long-term recovery efforts.

**Unit 3: Risk Assessment and Vulnerability Analysis**

Techniques for assessing the risk and vulnerability of communities, Tools and methodologies for evaluating potential disaster impacts, Case studies on the effectiveness of risk assessment in mitigating disaster effects, Development of critical thinking skills to manage and assess disaster impacts.

**Unit 4: Case Studies and Practical Applications**

Detailed case studies of significant natural disasters, Lessons learnt from past events to improve future disaster management, Strategies for building resilience in communities and ecosystems, - Practical exercises to apply theoretical knowledge in real-world scenarios.

**Books Recommended:**

1. Natural and Anthropogenic disasters (Vulnerability, Preparedness and Mitigation) by Madan Kumar, JHA.
2. Alexander, D. C. (1993). *Natural disasters*. New York, NY: Routledge.
3. Natural Hazards: Earth's Processes as Hazards, Disasters, and Catastrophes by Edward A. Keller and Duane E. DeVecchio.
4. National Disaster Management Guidelines by National Disaster Management Authority (NDMA), India

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5. Standard Operating Procedures for Responding to Natural Disasters-(NDMA)
6. National Policy on Disaster Management- (NDMA)

**Course No.:** DM-202

**Credits:** 04

**Title:** Anthropogenic Disasters

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2025, 2026 & 2027**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of studying "Anthropogenic Disasters" is to understand disasters caused by human activities, such as industrial accidents and pollution. The course explores their causes, consequences, prevention strategies, and the roles of human behaviour and policies. Students learn to analyze and mitigate the risks associated with anthropogenic disasters.

**Unit 1: Introduction to Anthropogenic Disasters**

Definition and classification Anthropogenic disasters: industrial accidents, chemical spills, nuclear disasters, and acts of terrorism; historical context and evolution of human-made disasters, examining key incidents that have shaped current understanding and response strategies; differences and similarities between natural and anthropogenic disasters, particularly in terms of causes, impacts, and mitigation strategies.

**Unit 2: Causes and Impacts of Anthropogenic Disasters**

Causes of anthropogenic disasters, examining the role of human activities such as industrial processes, urbanization, deforestation, and technological failures; Direct and indirect impacts of these disasters on human health, infrastructure, and the environment.

**Unit 3: Risk Assessment and Management of Anthropogenic Disasters**

Techniques and methodologies used to assess and manage the risks associated with anthropogenic disasters; Hazard identification, risk analysis, and vulnerability assessment, how these tools can be applied to prevent and mitigate the effects of human-made disasters Regulatory frameworks and policies designed to manage industrial and technological risks, highlighting international standards and best practices.

**Unit 4: Technological and Policy Approaches to Mitigation**

Role of technology and policy in mitigating the impacts of anthropogenic disasters; Use of advanced technologies such as Geographic Information Systems (GIS), early warning systems, and real-time monitoring in disaster prevention and response; importance of integrating technology into planning and policy development to enhance resilience against human-made hazards.

**Books Recommended:**

1. Natural and Anthropogenic disasters (Vulnerability, Preparedness and Mitigation) by Madan Kumar, JHA.

### *Three Year Degree Programme in Disaster Management*

2. Anthropogenic Disasters: Environmental Impact and Management edited by R. K. Gupta and S. C. Gupta.
3. Impact Analysis of Natural and Anthropogenic Disasters in India by N. C. Saxena and S. K. Tandon.
4. Role of Local Governance in Disaster Management: A Case Study of Indian Cities.
5. Policy and Governance in Disaster Management: Issues and Perspectives by Prakash C. Sharma and Sushma Mishra.

**Course No.:** DM-203

**Title:** Disaster Management Cycles

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2025, 2026 & 2027**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of understanding the Disaster Management Cycle is to grasp the comprehensive process involved in managing disasters, which includes preparedness, response, recovery, and mitigation. This cyclical approach aims to enhance resilience and reduce the impact of disasters through systematic planning, effective coordination, and community involvement at each stage.

#### **Unit 1: Pre-Disaster Strategies**

Understanding Pre-Disaster Strategies; Definition and significance of pre-disaster strategies; Key components and phases of pre-disaster strategies; Case studies demonstrating effective risk assessment and vulnerability analysis. Mitigation Measures: Structural and non-structural mitigation measures; Importance of public awareness and education in disaster preparedness.

#### **Unit 2: Syn-Disaster Strategies**

Early warning, Introduction to emergency response planning, Components of an effective emergency response plan' Importance of coordination among emergency Services, Understanding of communication systems, Evacuation procedures, Temporary shelters, Management of casualty, Public information and alerts.

#### **Unit 3: Post-Disaster Strategies**

Damage Assessment strategies, Debris management, Rehabilitation and reconstruction, Psychological support, Long-term recovery Planning; Significance of post-disaster strategies; Phases of post-disaster recovery and reconstruction; Key components and best practices; Case studies demonstrating effective assessment methods.

#### **Unit 4: Preparedness, Response and Recovery**

Training Programmes, Disaster Drills and Simulations, Policy Development and Community Involvement, Incident Command Systems, Rapid Response Teams and Resource Mobilization, Recovery Funding and Financial Assistance. Steps in developing a comprehensive disaster management plan; Role of multi-stakeholder involvement and community participation. Examples of successful disaster management plans.

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## *Three Year Degree Programme in Disaster Management*

### **Books Recommended:**

1. Introduction to Disaster Management by IFRC (International Federation of Red Cross and Red Crescent Societies).
2. Disaster Management Cycle – A Theoretical Approach by Dr. Rajib Shaw.
3. Managing Disasters in India by Pradeep Sahni.
4. Disaster Management: Future Challenges and Opportunities by P.G. Dhar Chakrabarti.
5. National Disaster Management Guidelines by National Disaster Management Authority (NDMA), India
6. Standard Operating Procedures for Responding to Natural Disasters-(NDMA)
7. National Policy on Disaster Management- (NDMA)

**Course No.:**DM-204

**Title:** Experiential Learning and Practical Training in Advanced Ice Climbing and Rescue Techniques

**Credits:** 12

**Maximum Marks:** 200

**Examination to be held in the year 2025, 2026 & 2027**

**Note:** The evaluation of this course shall be based on continuous assessment during the practical training on various aspects of disaster management being imparted during the course of study. The concerned teachers/ instructors shall keep a daily record of performance of the trainees and award marks as per their punctuality, understanding and performance during the practical sessions.

**Objective:** The objective of "Experiential Learning and Practical Training in Advanced Ice Climbing and Rescue Techniques" is to provide hands-on experience and develop practical skills necessary for safely navigating and performing advanced ice climbing and rescue operations. This includes training in advanced climbing techniques, rope work, ice protection, self-rescue, and team rescue strategies. The course aims to enhance participants' proficiency, decision-making abilities, and safety awareness in challenging ice climbing environments

### **Unit 1: Ice Craft Equipment and Techniques**

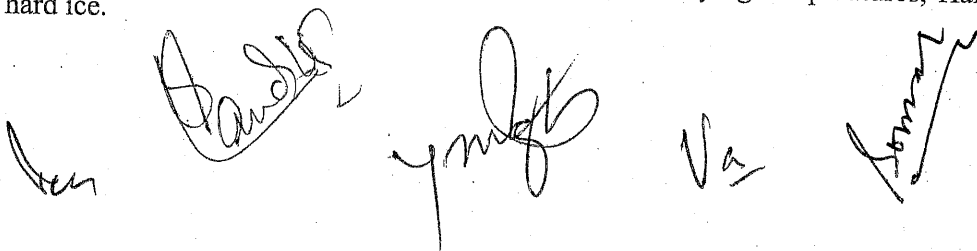
Introduction to ice craft equipment, Usage and maintenance of ice craft gear, Safety protocols and guidelines, Types of ice craft equipment, Selection criteria.

### **Unit 2: Haulage of Load Using Power Ascender**

Techniques for load haulage, Use of power ascenders in ice environments, Load assessment and planning, Equipment setup and usage, Efficiency techniques, Practical exercises and safety measures.

### **Unit 3: Ice Climbing Techniques**

Basics of ice climbing, Route selection and rope fixing on ice walls, Assessing ice conditions, Techniques for different ice conditions, Climbing in varying temperatures, Handling soft and hard ice.





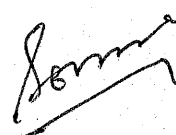
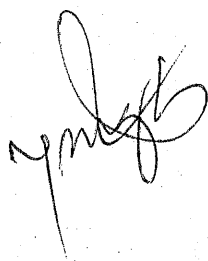
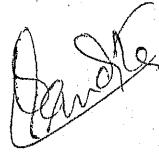
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### **Unit 4: Crevasse Fall and Rescue Drills**

Understanding crevasse fall scenarios, Risk assessment and identification, Rescue techniques and drills, Preparation of ice bases and emergency response, Drills and preparedness exercises.

#### **Books Recommended:**

1. Ice and Mixed Climbing: Modern Technique by Will Gadd.
2. Johnson, L. (2004). An introduction to mountain search and rescue. *Emergency Medicine Clinics*, 22(2), 511-524.
3. Attarian, A. (2002). Rock climbers' self-perceptions of first aid, safety, and rescue skills. *Wilderness & environmental medicine*, 13(4), 238-244.



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**SEMESTER III**

**DETAILED SYLLABUS**

**Course No.:** DM-301

**Credits:** 04

**Title:** Warfare and Technological Disasters

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2025, 2026 & 2027**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one question from each unit. Each question carries 20 Marks.

**Objective:** The objective of the course "Warfare and Technological Disasters" is to examine the impact and management of disasters arising from warfare and technological failures. It focuses on understanding the causes, consequences, and strategies for prevention, response, and recovery. Participants gain insights into the complex dynamics of human conflict, technological risks, and the implications for disaster preparedness and mitigation strategies.

**Unit 1: Introduction to Warfare and Technological Disasters**

Overview of warfare and technological disasters; Historical perspectives and case studies of warfare and technological disasters, examining their profound impact on societies and economies; Significant events and their repercussions on social and economic structures, Understanding the complexities of these phenomena.

**Unit 2: Military Strategies and Tactics**

Military strategies and the evolution of tactics; Significance of technological advancements in Military strategies; Tactical warfare techniques; Implications of weapons of mass destruction (WMDs), and the emerging threats of cyber warfare; counter-terrorism measures, showcasing how military tactics adapt to technological changes and new forms of threats.

**Unit 3: Technological Disasters**

Types and causes of technological disasters; Emergency response procedures; Environmental and health impacts Case studies and lessons learned from major disasters; Environmental and health impacts of such disasters, Case studies to illustrate significant incidents and the lessons learned.

**Unit 4: Ethical and Legal Considerations**

Ethical dilemmas in warfare; International laws and conventions; Human rights implications; Role of media and public opinion; Mitigation measures and preparedness planning; Critical aspects of managing technological disasters and mitigating their effects on communities and ecosystems; importance of ethical considerations and legal compliance in disaster management and warfare.

**Books Recommended:**

1. The Disaster Management Handbook edited by Jack Pinkowski.
2. Technological Disasters: A Handbook for Emergency Management by James F. Luedtke.

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3. Warfare Technology and Its Consequences edited by R. Sivakumar.
4. Technological Disasters: Causes, Consequences and Coping Strategies edited by A. K. Sinha.

**Course No.:** DM-302

**Title:** Role of Geology in Disaster Management

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2025, 2026 & 2027**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of the course "Role of Geology in Disaster Management" is to explore how geological processes contribute to natural disasters such as earthquakes, landslides, and volcanic eruptions. It aims to study the principles of geology to better predict, mitigate, and manage these hazards. Participants learn to apply geological knowledge to assess risks, develop early warning systems, and formulate effective disaster response plans.

#### **Unit 1: Introduction to Geology**

Definition and scope of geology in disaster management, Understanding different geological hazards, Geology in predicting disasters, Importance of geological surveys and maps, Tools used in geological studies, Combining geology with technology for safety.

#### **Unit 2: Geological Processes and Disaster Formation**

Tectonic processes and seismic hazards; Volcanic activity and its implications; Landslides and their geological triggers; mechanisms of tectonic processes and the seismic hazards they pose, the implications of volcanic activity; Importance of public education and awareness in understanding and mitigating the risks associated with these geological processes, highlighting the need for informed communities to effectively respond to and prepare for such events.

#### **Unit 3: Geological Factors in Disasters**

Geological factors contributing disasters, Impact analysis of past events to understand their effects, Critical role of geology in disaster risk reduction, Success stories of preventing geological disasters; Case studies and practical examples to illustrates how geological knowledge and proactive measures can significantly mitigate the impact of disasters.

#### **Unit 4: Prevention and Mitigation of Geological Hazards**

Techniques to prevent and mitigate Geological hazards, Role of vegetation and land use planning, Case studies of successful mitigation efforts, Role of geological aspects in management strategies, Long-term solutions for geological hazards.

#### **Books Recommended:**

1. Geological Disasters: Landslides, Earthquakes, and Tsunamis by Timothy Kusky.

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2. Kaushik, A., & Kaushik, C. P. (2010). *Basics of environment and ecology*. New Delhi, India: New Age International.
3. Geological Hazards: Causes, Consequences and Prevention by P. S. Sachdeva.
4. Applied Geology for Disaster Mitigation and Management edited by K. S. Valdiya.
5. Seismic Hazard Assessment and Mitigation Strategies in India by S. K. Nath.

**Course No.:** DM-303

**Title:** Disaster Management and Climate Change

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2025, 2026 & 2027**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of the course "Disaster Management and Climate Change" is to examine the intersection of climate change with natural disasters and their management. It aims to understand how climate change influences the frequency, intensity, and distribution of disasters such as floods, droughts, and storms.

#### **Unit 1: Introduction to Climate Change and its Impacts on Disasters**

Overview of climate change: causes and global trends; Climate change impacts on natural disasters: floods, droughts, storms; Linkages between climate change and frequency and intensity of disasters; foundational understanding of how climate change exacerbates natural hazards.

#### **Unit 2: Vulnerability Assessment and Climate Change**

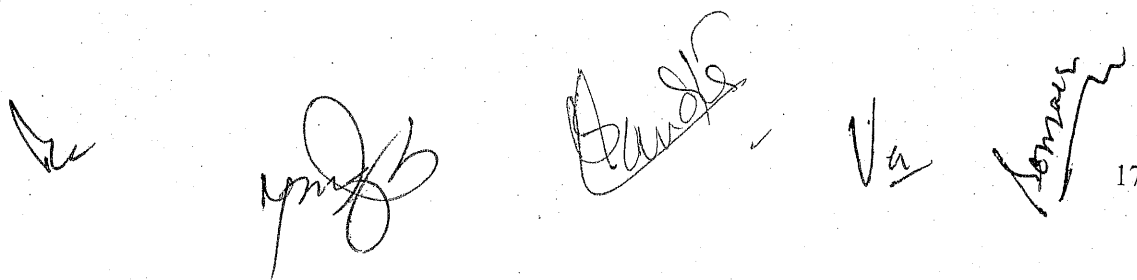
Vulnerability of communities and infrastructure to climate-related disasters; Causes and impacts of climate change on agriculture, water resources, and human health; Case studies to illustrate these effects; Importance of assessing vulnerabilities to inform effective disaster management strategies.

#### **Unit 3: Adaptation Strategies**

Climate adaptation strategies in disaster management planning; Integrating climate change considerations into risk assessments; Community-based adaptation and resilience-building initiatives; Integrating climate change considerations into risk assessments; necessity of proactive planning and community involvement in enhancing resilience to climate-related disasters.

#### **Unit 4: Mitigation Strategies and Sustainable Disaster Management**

Mitigation strategies to reduce greenhouse gas emissions and disaster risks; Integrating climate change considerations into disaster management planning; Policy frameworks and responses to climate-related risks; Sustainable practices and policy development to mitigate the adverse effects of climate change on disaster management.



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### **Books Recommended:**

1. Climate Change and Disaster Management by S. Bhaskar.
2. Climate Change and Disaster Risk Management edited by Rajib Shaw, Juan M. Pulhin, and Joy Jacqueline Pereira.
3. Adaptation Strategies to Climate Change for Disaster Risk Reduction in India by Rajib Shaw and Aditya Bastola.
4. Climate Change and Vulnerability Assessment: Applications and Frameworks edited by Anand Patwardhan and Kirit Parikh.

**Course No.:**DM-304

**Title:** Experiential Learning and Practical Training in Snow Operations and Safety Training

**Credits:** 12

**Maximum Marks:** 200

**Examination to be held in the year** 2025, 2026 & 2027

**Note:** The evaluation of this course shall be based on continuous assessment during the practical training on various aspects of disaster management being imparted during the course of study. The concerned teachers/ instructors shall keep a daily record of performance of the trainees and award marks as per their punctuality, understanding and performance during the practical sessions.

**Objective:** The objective of the course "Experiential Learning and Practical Training in Snow Operations and Safety Training" is to provide hands-on experience and practical skills necessary for safely conducting snow operations. Participants learn techniques for snow assessment, avalanche safety, winter survival, and rescue operations. The course aims to enhance proficiency in snow-related activities while emphasizing safety protocols, decision-making, and environmental stewardship in snowy environments.

### **Unit 1: Snow Craft and Survival Training**

Introduction to snow craft equipment and techniques, Glissading, fall arrest, and proper use of ice axes, Preparation of soft snow bases and rope coiling, Survival training and navigation in snow-bound areas.

### **Unit 2: Leadership and Minor Tactics in Snow**

Leadership in snow-bound areas and winter hazards, Avalanche rescue techniques using dogs, Effect of snow on minor tactics and field craft, Importance of teamwork and coordination in harsh conditions.

### **Unit 3: Advanced Military Ski Techniques**

Advanced military ski techniques including parallel turns and pole plant, Techniques for off-piste skiing with combat load, Ski jump and techniques for moving on skis while roped up, Long distance patrols on skis with combat load.

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### **Unit 4: Avalanche Safety and Rescue**

Use of avalanche rescue equipment including rods and victim detectors, Methods of search with avalanche rod and Recco radar, High altitude area clothing and ladder launching techniques, Importance of training and preparedness in avalanche rescue operations.

### **Books Recommended:**

1. Snow and Ice Techniques: Advanced Mountain Climbing Techniques by Bill March.
2. Snow Safety Handbook by Judy Wessler.
3. Ice & Mixed Climbing: Modern Technique by Will Gadd
4. Freedom of the Hills by The Mountaineers
5. Challenge of the High Himalaya by Harish Kapadia

## **SEMESTER IV**

### **DETAILED SYLLABUS**

**Course No.:** DM-401

**Title:** Information Technology in Disaster Management

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2026, 2027 & 2028**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one question from each unit. Each question carries 20 Marks.

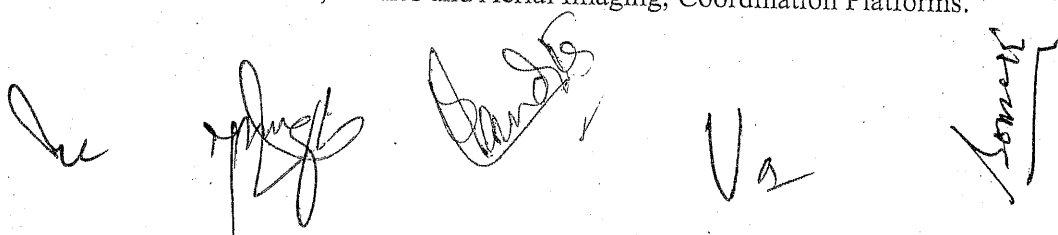
**Objective:** The objective of the course "Information Technology in Disaster Management" is to explore the role of IT systems and technologies in enhancing disaster preparedness, response, and recovery efforts. It aims to study how information systems, data analytics, communication technologies, and geographic information systems (GIS) can improve decision-making, situational awareness, and coordination during disasters. Participants learn to leverage IT tools for real-time monitoring, risk assessment, and effective communication in disaster management scenarios.

### **Unit 1: IT in Disaster Preparedness**

Use of Geographic Information Systems (GIS) in disaster preparedness, Data Analytics for Risk Assessment, Early Warning Systems, Training and Simulation Tools.

### **Unit 2: IT in Disaster Response**

Real-Time Communication Systems, Mobile Applications for First Responders, Social Media for Situational Awareness, Drones and Aerial Imaging, Coordination Platforms.



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#### **Unit 3: IT in Disaster Recovery**

Damage and Needs Assessment Tools, Database Management Systems, Logistics and Supply Chain Management Software, Recovery Monitoring and Reporting Systems, Digital Infrastructure Restoration.

#### **Unit 4: Social Media and Disaster Management**

Role of Social Media in Crisis Communication, Public Information Dissemination, Crowd sourcing Information and Resources, Analysing Social Media Data, Ethical Considerations.

#### **Books Recommended:**

1. Information Technology in Disaster Risk Reduction by Shailesh Nayak and A. S. R. S. Prasad.
2. The Role of Information and Communication Technologies in Disaster Management: Developing a Framework for Africa by N. Dlodlo, D. Foko, M. M. Mashingaidze, and H. Adigun.
3. Media in Disaster Management by Dr. R. K. Sinha.
4. Disaster Management and Information Technology by Rajesh Arora.
5. Role of Information Technology in Disaster Response in India by Anil K. Gupta and Sreeja S. Nair.
6. Role of Information Technology in Disaster Recovery in India by Anil K. Gupta and Sreeja S. Nair.
7. Application of Remote Sensing and GIS in Disaster Management by Shailesh Nayak.

**Course No.:** DM-402

**Title:** Comprehensive Risk Assessment Strategies

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2026, 2027 & 2028**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of the course "Comprehensive Risk Assessment Strategies" is to equip participants with the knowledge and skills to systematically identify, analyze, and mitigate risks across various domains. It focuses on understanding risk assessment methodologies, including qualitative and quantitative approaches, to assess hazards, vulnerabilities, and potential impacts. The course aims to enable effective decision-making and the implementation of preventive measures to enhance resilience and reduce the likelihood and severity of adverse events.

#### **Unit 1: Fundamentals of Risk Management**

Introduction to the concepts of risk assessment and management, Identification and categorization of hazards, Overview of assessment methodologies, Quantitative and qualitative techniques, Importance of regulatory frameworks and compliance requirements.

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### **Unit 2: Risk Analysis Tools and Models**

In-depth look at various risk analysis, Tools and models involved in risk analysis, Application of these tools in real-world scenarios, Case studies illustrating the practical use of risk analysis methodologies, Communication of risks to stakeholders.

### **Unit 3: Mitigation Strategies and Contingency Planning**

Development of effective mitigation strategies, Importance of contingency planning in risk management, Evaluation of residual risks after implementing mitigation measures, Emerging trends and advancements in risk assessment methodologies.

### **Unit 4: Practical Applications and Case Studies**

Real-world applications of risk assessment techniques, Detailed case studies on successful risk management practices, Lessons learned from past risk assessment failures, Exercises to apply risk assessment knowledge in various contexts.

### **Books Recommended:**

1. Risk Assessment and Management by International Federation of Red Cross and Red Crescent Societies (IFRC).
2. Disaster Management: Risk Assessment and Mitigation by Anil K. Gupta and Sreeja S. Nair.
3. Application of Risk Assessment Models in Disaster Management: Case Studies from India by R.K. Bhandari.
4. Development and Application of Risk Assessment Tools for Natural Disasters in India by P.P. Dey.
5. Disaster Management: Future Challenges and Opportunities edited by S.L. Goel.
6. Innovative Approaches to Disaster Management: Case Studies from India by K.N. Singh and S. Sharma.
7. Case Studies on Disaster Management in India: Lessons Learned and Best Practices by Anil K. Gupta and Sreeja S. Nair.

**Course No.:** DM-403

**Title:** Emerging Technologies in Disaster Management

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2026, 2027 & 2028**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The course "Emerging Technologies in Disaster Management" focuses on utilizing new advancements like artificial intelligence, drones, remote sensing, and IoT to enhance disaster preparedness, response, and recovery. It aims to improve situational awareness, decision-making, and coordination during disasters, promoting effective risk mitigation and community resilience.



**Unit 1: Technological Tools and Innovations**

Overview of technological tools and innovations used in disaster preparedness, response, and recovery, Artificial Intelligence and Machine Learning, Robotics and Automation, Ethical Use of Information, Transparency and Accountability.

**Unit 2: Early Warning Systems**

Exploration of technologies such as sensors, satellites, and communication systems for timely Early Warning Systems, disaster alerts and risk assessment; Seismic Sensors and Earthquake Detection, Weather Monitoring Systems, Flood and Tsunami Warning Systems, Communication Systems for Alerts, Risk Assessment and Forecasting.

**Unit 3: ICT Tools in Disaster Management**

Application of ICT tools in coordinating emergency responses and disseminating information during disasters., Mobile Applications for Disaster Response, Social media for Information Dissemination, Cloud Computing for Data Storage, Geographic information system, Virtual Reality for Training.

**Unit 4: Coordination and Communication**

Emergency Operations Centres, Real-Time Data Sharing, Interagency Collaboration Tools, Crisis Management Platforms, Media Engagement, Case Studies of Effective Communication.

**Books Recommended:**

1. Emerging Technologies in Disaster Management by Santosh Kumar and Rajib Shaw.
2. Technological Disasters: An Indian Perspective by Subir Ghosh.
3. Geographic Information Systems (GIS) for Disaster Management by Brian Tomaszewski.
4. Early Warning Systems for Natural Disaster Reduction edited by Jochen Zschau and Andreas N. Küppers.
5. Geospatial Technologies for Disaster Risk Management in India.
6. Role of ICT in Disaster Management in India by S. Chandrashekar and K. Manasa.

**Course No.:**DM-404

**Title:** Experiential Learning and Practical Training in Advanced Mountain Skills and Rescue Techniques

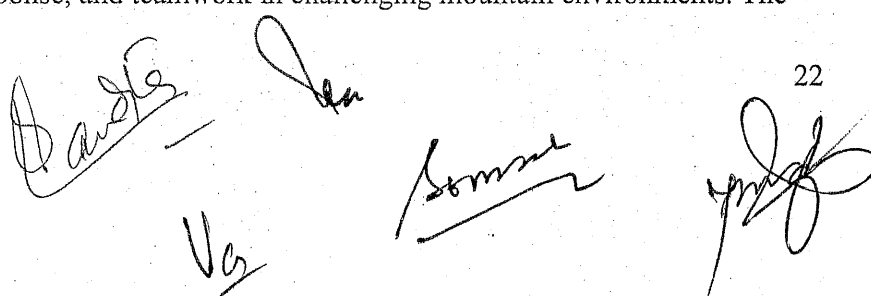
**Credits:** 12

**Maximum Marks:** 200

**Examination to be held in the year 2026, 2027 & 2028**

**Note:** The evaluation of this course shall be based on continuous assessment during the practical training on various aspects of disaster management being imparted during the course of study. The concerned teachers/ instructors shall keep a daily record of performance of the trainees and award marks as per their punctuality, understanding and performance during the practical sessions.

**Objective:** The objective of "Experiential Learning and Practical Training in Advanced Mountain Skills and Rescue Techniques" is to provide hands-on training in advanced mountain climbing techniques, navigation, and rescue operations. Participants develop proficiency in risk assessment, emergency response, and teamwork in challenging mountain environments. The



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course emphasizes safety protocols, decision-making under pressure, and environmental stewardship

### **Unit 1: Avalanche Rescue Techniques**

Essential rescue tools and methods such as the use of the avalanche rod and avalanche victim detector, search techniques with the avalanche rod, and Recco radar utilization; importance of appropriate high-altitude area clothing, Practical skills for effective avalanche response and victim recovery.

### **Unit 2: Advanced Ski Techniques**

Key Skiing techniques: parallel turns, pole plant techniques, and Christiania turns; off-piste skiing with combat load and ski jump techniques, Advanced skiing maneuvers under various conditions.

### **Unit 3: Rescue and Navigation**

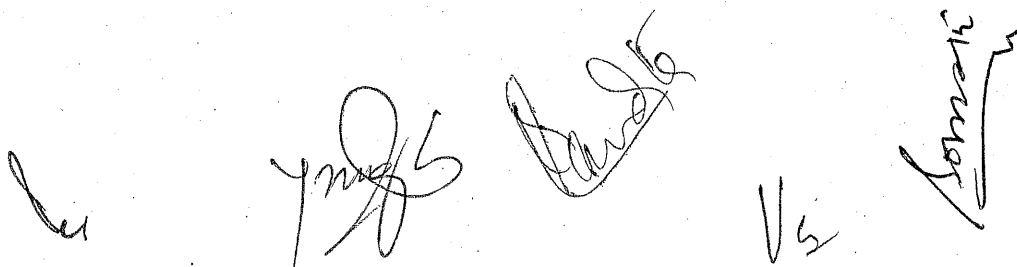
Critical rescue operations and navigation skills including ladder launching and long-distance patrols on skis; use of jumar and expansion bolts, advanced ice craft techniques, and the Tyrolean traverse, equipping individuals; needed for effective mountain rescues and navigation.

### **Unit 4: Mountain Survival Skills**

Important survival techniques for mountain environments, including glacier marching and camping, navigation in snow, and managing mountain hazards; use of kestrel and altimeter, mountain weather analysis, firing on skis with a combat load, camouflage and concealment, and artificial triggering of avalanches, ensuring preparedness for extreme conditions.

### **Books Recommended:**

1. Advanced Mountain Rescue Techniques by Anna Howard.
2. Alpine Climbing: Techniques to Take You Higher by Mark Houston and Kathy Cosley.
3. Material by the HAWS
4. Mountain Rescue Techniques by Brigadier P.K. Thakur
5. High Altitude Medicine and Physiology by Colonel Dr. S.K. Dash
6. High Altitude Mountaineering by Andrew Lock
7. Winter Warfare: Tactics, Techniques, and Training for Mountain Operations by Brigadier N.C. Mohanty
8. The Ski Guide Manual: Advanced Techniques for the Backcountry by Rob Coppolillo
9. The Handbook of Mountain Warfare by Major General J.F.C. Fuller
10. National Disaster Management Guidelines by National Disaster Management Authority (NDMA), India
11. Standard Operating Procedures for Responding to Natural Disasters-(NDMA)
12. National Policy on Disaster Management- (NDMA)



**SEMESTER V**

**DETAILED SYLLABUS**

**Course No.:** DM-501

**Title:** Medical Emergency & Casualty Management

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2026, 2027 & 2028**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one question from each unit. Each question carries 20 Marks.

**Objective:** The objective of the course "Medical Emergency & Casualty Management" is to equip participants with the skills and knowledge to effectively respond to medical emergencies and manage casualties. It focuses on teaching first aid, triage, emergency medical procedures, and patient transport.

**Unit 1: Basic Life Support Techniques**

Importance of Cardiopulmonary Resuscitation (CPR), in restoring circulation and oxygenation; Airway Management Techniques, Haemorrhage Control Methods to prevent life-threatening blood loss, Fundamental principles of fracture management to stabilize and immobilize injured limbs effectively.

**Unit 2: Immediate Response Protocols**

Importance of first aid techniques to address various injuries and illnesses promptly, emergency response procedures for initiating timely care, strategies for stabilizing injured individuals to prevent further harm, and protocols for safe transportation to medical facilities. Triage prioritization methods to assess and manage multiple casualties based on severity and urgency.

**Unit 3: Medical Emergency Recognition and Management**

Important protocols for managing cardiac arrest and respiratory distress to restore vital functions, procedures for handling allergic reactions and poisoning incidents promptly, techniques for managing seizures and providing trauma care, and principles for coordinating responses to mass casualty incidents to optimize outcomes.

**Unit 4: Disaster Management and Emergency Response**

Importance of Coordination of Emergency Response Teams, Principles of disaster management, planning strategies for mass casualty incidents, Roles and responsibilities within emergency response teams; Importance of organized response efforts and preparedness planning in mitigating the impact of disasters.

**Books Recommended:**

1. National Disaster Management Guidelines by National Disaster Management Authority (NDMA), India
2. Standard Operating Procedures for Responding to Natural Disasters-(NDMA)
3. National Policy on Disaster Management- (NDMA)

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4. Disaster Management and Emergency Medicine in India by N.C. Jain and A.K. Mittal.
5. Casualty Management in Disasters: An Indian Perspective by V. K. Tiwari.
6. Basic Life Support and First Aid by Dr. S. N. Chugh.
7. Emergency Medical Services and Disaster Management: A Holistic Approach by P. S. Reddy.
8. Assessment of Immediate Response Protocols in Urban Disasters in India by P. P. Dey.

**Course No.:** DM-502

**Title:** Disaster Resilience

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2026, 2027 & 2028**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one question from each unit. Each question carries 20 Marks.

**Objective:** The objective of Disaster Resilience is to strengthen the ability of communities, organizations, and systems to withstand, adapt to, and recover from disasters. It involves building robust infrastructure, implementing effective policies, fostering community engagement, and enhancing preparedness and response capabilities. The goal is to minimize the impact of disasters, protect lives and livelihoods, and promote sustainable development even in the face of adversity.

#### **Unit 1: Fundamentals of Disaster Resilience**

Foundational concepts of disaster resilience, Dynamics of disasters and their impacts on communities; Definition and scope of disaster resilience, historical perspectives on resilience-building efforts, theoretical frameworks such as the Disaster Resilience Cycle, and case studies Successful resilience strategies and their outcomes.

#### **Unit 2: Emergency Shelter Management**

Principles of risk reduction and mitigation planning, integration of resilience into urban planning and development practices, Shelter planning and setup, Hygiene and sanitation in emergency shelters, Camp coordination and management, psychosocial support for sheltered individuals.

#### **Unit 3: Building Community Resilience**

Strategies for building community resilience at local and regional levels; Community engagement and participation in resilience-building efforts, capacity-building through education and training programs, fostering social cohesion and networks, leveraging local resources and knowledge for disaster preparedness and response, examples of community-led initiatives that have strengthened resilience in diverse contexts.

#### **Unit 4: Resilience in Policy and Governance**

Role of policy and governance in enhancing disaster resilience at national and international levels; Policy frameworks and legislative measures aimed at promoting resilience, governance structures for coordinating disaster preparedness and response efforts, public-private partnerships in resilience-building, ethical considerations in disaster governance, and case

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studies illustrating effective policy interventions for bolstered resilience and facilitated sustainable recovery from disasters.

#### **Books Recommended:**

1. Disaster Resilience: An Integrated Approach by Douglas Paton and David Johnston.
2. Disaster Response and Management: Text and Case Studies by V. K. Singh.
3. Emergency Management: The American Experience 1900-2010 by Claire B. Rubin.
4. Managing Emergencies and Crises by David E. McEntire.
5. Community-Based Disaster Risk Reduction by Rajib Shaw.
6. Disaster Risk Reduction in South Asia by H. Nagesh Kumar.
7. Mainstreaming Disaster Risk Reduction into Development by NIDM.

**Course No.:** DM-503

**Title:** Preparedness in Disaster Management

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2026, 2027 & 2028**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of preparedness in disaster management is to ensure readiness at all levels: individual, community, and organizational to effectively respond to potential disasters. It involves proactive planning, training, resource allocation, and communication strategies aimed at reducing vulnerability and minimizing the impact of disasters. The goal is to enhance resilience, save lives, and mitigate socioeconomic disruptions during emergencies

#### **Unit 1: Fundamentals of Preparedness**

Importance of early planning and readiness; assessing risks and vulnerabilities, developing emergency response plans, establishing communication protocols, and conducting drills and simulations to enhance preparedness at organizational and community levels.

#### **Unit 2: Preparedness in Disaster Management**

Resource Management and Logistics; Significance of Resource Management and Logistics supplies; Inventory management, procurement strategies, stockpiling essential supplies, establishing distribution networks, importance of coordinating logistical operations to support significance of swift and efficient response efforts during emergencies.

#### **Unit 3: Preparedness in Disaster Management**

Training and Capacity Building: Essential components of preparedness; importance of designing and implementing training programs for emergency responders and community members, skills in first aid, search and rescue techniques, disaster-specific protocols; initiatives to strengthen local resilience; ways to empower communities in disaster preparedness and response.

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### **Unit 4: Preparedness in Disaster Management**

Integration of Technology and Innovation: Importance of Integration of Technology and Innovation; leveraging technological advancements to enhance preparedness; Use of Geographic Information Systems (GIS) for mapping risks and resources, Early warning systems for timely alerts, utilizing communication technologies for real-time information sharing, Innovative solutions for adaptive planning and response strategies in disaster management.

#### **Books Recommended:**

1. Disaster Preparedness for Medical Emergencies in India: A Community-Based Approach by N. Sharma.
2. Natural and Anthropogenic disasters (Vulnerability, Preparedness and Mitigation) by Madan Kumar, JHA.
3. Disaster Resilience: An Integrated Approach by Douglas Paton and David Johnston.
4. Disaster Preparedness and Management by Pardeep Sahni.
5. Emergency Management: The American Experience 1900-2010 by Claire B. Rubin.
6. Managing Emergencies and Crises by David E. McEntire.
7. Burby, R. J., Deyle, R. E., Godschalk, D. R., & Olshansky, R. B. (2000). Creating hazard resilient communities through land-use planning. *Natural Hazards Review*, 1(2), 99-106. [https://doi.org/10.1061/\(ASCE\)1527-6988\(2000\)1:2\(99\)](https://doi.org/10.1061/(ASCE)1527-6988(2000)1:2(99)).
8. Disaster Response: Concepts and Cases by Rajesh Arora.

**Course No.:**DM-504

**Title:** Experiential Learning and Practical Training in Outdoor Survival and Tactical Combat Proficiency

**Credits:** 12

**Maximum Marks:** 200

**Examination to be held in the year** 2026, 2027 & 2028

**Note:** The evaluation of this course shall be based on continuous assessment during the practical training on various aspects of disaster management being imparted during the course of study. The concerned teachers/ instructors shall keep a daily record of performance of the trainees and award marks as per their punctuality, understanding and performance during the practical sessions.

**Objective:** The objective of "Experiential Learning and Practical Training in Outdoor Survival and Tactical Combat Proficiency" is to provide hands-on training in survival skills and tactical combat techniques in outdoor environments. Participants learn to navigate, survive, and respond effectively in challenging conditions, focusing on teamwork, decision-making under pressure, and operational readiness. The course aims to enhance participants' proficiency in survival and tactical combat scenarios, emphasizing safety, adaptability, and resilience.

### **Unit 1: Survival Skills**

Essential survival techniques in mountain environments: Glacier March Techniques for safe traversal over icy terrain, camping in Snow and Mountains covering shelter building and survival basics, Identifying and Mitigating Mountain Hazards to ensure safety, Navigation

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Skills in Extreme Conditions using map and compass, and Special Heliborne Operations for emergency evacuations and logistics support.

#### **Unit 2: Advanced Climbing Techniques**

Advanced climbing skills necessary for challenging terrains: Ascending with Jumar, Use of Expansion Bolts, Advanced Ice Craft Techniques, Tyrolean Traverse, techniques for steep ascents, and Camp Hygiene Practices to maintain health in remote environments.

#### **Unit 3: Mountain Weather and Equipment**

Impact of weather and essential equipment for mountain activities: Use of Kestrel and Altimeter, Analysing Mountain Weather, Latest Trends in Ski Equipment for performance and safety, Use of Explosives in Avalanche Control to mitigate risks, Snow Stability Tests to assess avalanche danger, and Basic Life Support covering first aid in remote settings

#### **Unit 4: Combat Skills**

Combat skills adapted for mountain operations: Firing on Skis with Combat Load for tactical engagements, Winter Individual Battle Drill for combat readiness in snowy conditions, Camouflage and Concealment techniques for stealth operations, Long Distance Patrols for reconnaissance and surveillance, Artificial Triggering of Avalanches for tactical advantage, and Combat First Aid to address injuries in combat situations.

#### **Books Recommended:**

1. Survival Theory: A Preparedness Guide by Jonathan Hollerman.
2. Wilderness and Disaster Medicine by Christopher Van Tilburg.
3. Outdoor Survival Skills by Larry Dean Olsen.
4. Bushcraft 101: A Field Guide to the Art of Wilderness Survival by Dave Canterbury.
5. Mountaineering in the Indian Himalaya by M.S. Kohli
6. Himalayan Mountaineering: In Love with Mountains by Major H.P.S. Ahluwalia
7. The Ultimate Guide to Winter Camping by Cliff Jacobson

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### **SEMESTER VI**

#### **DETAILED SYLLABUS**

**Course No.:** DM-601

**Title:** Role of Armed Forces in Disaster Management

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2027, 2028 & 2029**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of the course "Role of Armed Forces in Disaster Management" is to explore the contributions and capabilities of military forces in responding to and managing disasters. It aims to study how armed forces provide support in humanitarian aid, rescue operations, logistics, and infrastructure rehabilitation during emergencies. Participants gain insights into the coordination between civilian authorities and military units to enhance disaster response efficiency and community resilience.

#### **Unit 1: Introduction to Armed Forces in Disaster Management**

Overview of armed forces' roles and responsibilities in disaster response; Historical perspective and evolution of armed forces' involvement in disaster management; Legal and organizational frameworks guiding armed forces' disaster response efforts; Case studies illustrating successful armed forces interventions in past disasters.

#### **Unit 2: Military Logistics and Infrastructure Support**

Deployment strategies and logistics planning during disaster response; Role of military bases and infrastructure in supporting disaster relief operations; Coordination with civilian agencies and international organizations; Challenges and considerations in maintaining logistics during prolonged disaster relief efforts.

#### **Unit 3: Search and Rescue Operations**

Techniques and methodologies employed by armed forces in search and rescue missions; Use of specialized equipment and technologies for search and rescue operations; Coordination between armed forces, emergency services, and volunteer organizations; Training and preparedness programs for armed forces personnel in search and rescue.

#### **Unit 4: Medical and Humanitarian Assistance**

Role of armed forces in providing medical aid and humanitarian assistance; Establishing field hospitals and medical facilities during disaster response; Collaborative efforts with medical professionals and humanitarian organizations; Challenges and ethical considerations in providing medical and humanitarian assistance in disaster zones.

#### **Books Recommended:**

1. Role of Armed Forces in Disaster Management: A Case Study of India by Colonel Vivek Chadha



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2. Disaster Management: Role of Armed Forces by Lieutenant General (Retd) JR Mukherjee.
3. 'Disaster Management and the Role of Armed Forces by P. K. Gautam.
4. Role of Armed Forces in Disaster Management by V. K. Singh.

**Course No.:** DM-602

**Title:** Role of Civil agencies in Disaster Management

**Credits:** 04

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2027, 2028 & 2029**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of the course "Role of Civil Agencies in Disaster Management" is to examine the roles and responsibilities of civilian organizations and agencies in preparing for, responding to, and recovering from disasters. It aims to explore how these agencies coordinate with government bodies, NGOs, and communities to provide essential services, conduct relief operations, and support disaster resilience efforts.

#### **Unit 1: Organizational Structures**

Hierarchical structures and responsibilities Role and responsibilities: Various Agencies involved in disaster management; Functions of State and Local Government Bodies Role and responsibilities of State and Local Government Bodies, Roles of Emergency Management Agencies, Coordination mechanisms

#### **Unit 2: Non-Governmental Organizations (NGOs)**

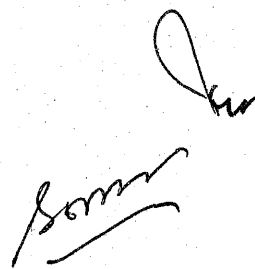
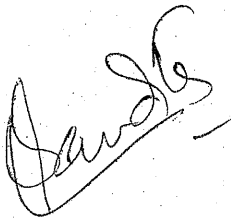
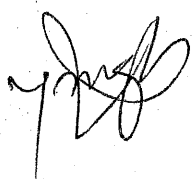
Role of NGOs in disaster response and recovery Importance of NGOs in mobilizing resources during emergencies, their roles and responsibilities in community outreach and support, collaboration strategies with Government Agencies, Role of Community-Based Volunteers in disaster preparedness and response.

#### **Unit 3: International Aid Agencies**

Roles and contributions of international organizations in disaster management: United Nations and other International Organizations; bilateral and multilateral aid, structure and implementation of Humanitarian Assistance Programmes, Mechanisms for effective aid delivery, training and capacity-building initiatives, Long-term recovery support mechanism.

#### **Unit 4: Media and Other Bodies**

Role of Media in Disaster Management, Role of Media in Public Awareness Campaigns, Information Dissemination, Ethical Considerations, Criticality of media in Emergency Response Activities, Media's crucial role in emergency response activities, Role in long-term recovery support.



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### **Books Recommended:**

1. Role of Civil Agencies in Disaster Management: A Perspective from India by Dr. Pradeep Singh.
2. Disaster Management and Civil Agencies: Indian Perspective by Dr. J.K. Tripathy.
3. Role of NGOs in Disaster Management in India by Rekha Datta.
4. The Role of Civil Defence in Disaster Management in India by D. K. Bhandari.
5. Role of Local Governments in Disaster Management by P. P. Dey.
6. Role of International Aid Agencies in Disaster Management: A Case Study of the Indian Ocean Tsunami by A. Kumar and M. Singh.
7. Media in Disaster Management by Dr. R. K. Sinha.

**Course No.:** DM-603

**Credits:** 04

**Title:** Yoga for stress Management

**Duration of Examination:** 3 hours

**Maximum Marks:** 100 (Theory Examination: 80 Marks; internal assessment: 20 Marks)

**Examination to be held in the year 2027, 2028 & 2029**

**Guidelines for setting of question paper:** Eight long answer type questions are to be set with two questions from each unit. The candidate has to attempt only four questions selecting one questions from each unit. Each question carries 20 Marks.

**Objective:** The objective of "Yoga for Stress Management" is to teach participants techniques and practices from yoga to effectively manage stress and promote overall well-being. It aims to explore yoga's therapeutic benefits, including relaxation, mindfulness, and physical exercises that reduce stress hormones and promote mental clarity. Participants learn practical strategies to integrate yoga into their daily routines to enhance resilience, improve emotional balance, and achieve a healthier lifestyle.

### **Unit 1: Foundations of Yoga and Stress Management**

Introduction to Yoga: History and Philosophy; Importance of yoga in role in promoting physical, mental, and emotional well-being; Understanding Stress: Causes and Effects on the Body and Mind; Principles of Stress Management; Benefits of Yoga: Stress Relief; Mind-body practices for overall wellness

### **Unit 2: Yoga Asanas for Stress Reduction**

Practical applications: Basic Postures for Relaxation and Stress Relief; Breathing Techniques (Pranayama) for Calming the Mind; Mind and enhance vitality; Sequence of Asanas for Daily Practice; Modifications and Adaptations for All Levels.

### **Unit 3: Meditation and Mindfulness Practices**

Introduction to Meditation: Techniques and Benefits; Guided Meditations for Stress Relief; Tailored for stress reduction and relaxation; Incorporating Mindfulness into Daily Life; Yoga Nidra (Yogic Sleep) for Deep Relaxation; Practices for deep relaxation and rejuvenation.

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### **Unit 4: Integrating Yoga into a Stress-Free Lifestyle**

Yoga Practice for Stress Management; Combining Yoga with Other Stress Reduction Techniques (e.g., Journaling, Time Management); Strategies for developing Healthy Habits and Routines; Long-term Strategies for Maintaining Stress-Free Living

#### **Books Recommended:**

1. Smoleńska, O. I., & Pilarska, M. (2021). Health and functional benefits of yoga practice in times of the COVID-19 coronavirus pandemic. *Pedagogy and Psychology of Sport*, 7(2), 21-38.
2. Odigie, A. (2016). Stress management for healthcare professionals.
3. Yoga for Promotion of Positive Health by H.R. Nagendra and R. Nagarathna.

**Course No.:**DM-604

**Title:** Experiential Learning and Practical Training in Emergency Response and Safety Procedures in Challenging Environments

**Credits:** 12

**Maximum Marks:** 200

**Examination to be held in the year 2027, 2028 & 2029**

**Note:** The evaluation of this course shall be based on continuous assessment during the practical training on various aspects of disaster management being imparted during the course of study. The concerned teachers/ instructors shall keep a daily record of performance of the trainees and award marks as per their punctuality, understanding and performance during the practical sessions.

**Objective:** The objective of "Experiential Learning and Practical Training in Emergency Response and Safety Procedures in Challenging Environments" is to provide hands-on training in responding to emergencies and implementing safety procedures in difficult conditions. Participants learn to assess risks, execute emergency protocols, and coordinate rescue operations effectively. The course aims to enhance participants' preparedness, decision-making skills, and teamwork in challenging environments, emphasizing safety, efficiency, and resilience.

#### **Unit 1: Basic Life Support and First Aid**

Basic Life Support (BLS) Techniques, Combat First Aid Procedures, Field conditions, Quick and effective treatment; Camp Hygiene Best Practices; Outdoor settings; Cardiopulmonary Resuscitation (CPR); training to respond to cardiac emergencies.

#### **Unit 2: Health Hazards in Extreme Conditions**

Cold Injury Prevention and Management, Health Risks in Mountainous Areas, Altitude sickness and environmental hazards; Physiological effects of High Altitude on the Body; High altitude-related illnesses; Personal Hygiene in Snow-Covered Terrains.

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### **Unit 3: Ski Injuries and Safety**

First Aid for Ski-Related Injuries, Langlauf Techniques with Combat Load, Parallel Turns on Skis, Slalom Techniques; Safe skiing practices and maneuvering; Safety protocols.

### **Unit 4: Casualty Evacuation and Practical Exercises**

Casualty Evacuation Techniques on Skis, Simulated Rescue Operations; Practical Drills for Emergency Response, Readiness and coordination; Consolidating skills; Simulated scenarios to apply evacuation protocols under realistic conditions; hands-on training to ensure proficiency in managing medical emergencies and coordinating evacuation efforts effectively.

### **Books Recommended:**

1. Disaster Operations and Decision Making by Roger C. Jensen and Marie N. Bourgeois
2. Disaster Education and Risk Reduction: Roles of Education and Training edited by Rajib Shaw and Koichi Shiwaku.
3. Training Manual on Comprehensive Disaster Risk Management Framework by NIDM.
4. Cudworth, E. (2003). *Environment and society*. London, UK: Routledge.
5. Hannigan, J. (2006). *Environmental sociology* (2<sup>nd</sup> ed.). London, UK: Routledge.

