

D.D.U. Gorakhpur University, Gorakhpur



## **Syllabus**

for

**P.G.Diploma Programme**

in

**Disaster and National Security Management  
(PGDDNSM)**

**Semester Courses based on CBCS  
(Effective from Session 2022-23)**

**Department of Defence & Strategic Studies  
Faculty of Science**

D.D.U. Gorakhpur University, Gorakhpur

**Post Graduate Diploma in Disaster and National Security**  
**Management (PGDDNSM) Syllabus**

<b>Semester - I</b>			
<b>Course Nature</b>	<b>Course Code</b>	<b>Core Courses</b>	<b>Credit</b>
<b>Compulsory Course</b>	PGDDNSM 501	Understanding Disaster	3+0
	PGDDNSM 502	Concept of National Security	3+0
<b>Elective Course</b>	PGDDNSM 503	National Case studies in Disaster Management	3+0
	PGDDNSM 504	Community Linkage in Disaster Management	3+0
Practical / Project	PGDDNSM 505		0+6
<b>Semester - II</b>			
<b>Compulsory Course</b>	PGDDNSM 506	Disaster Preparedness and Response	3+0
	PGDDNSM 507	Role of Various Agencies in Disaster Management	3+0
<b>Elective Course</b>	PGDDNSM 508	Global Case Studies in Disaster Management	3+0
	PGDDNSM 509	Reporting, Information and Documentation in Disasters	3+0
Practical / Project	PGDDNSM 510		0+6

**Program Outcomes:**

Post Graduate Diploma in Disaster and National Security Management is a Diploma level course. The course provides comprehensive knowledge to the learners on disaster preparedness, mitigation, and rehabilitation. It will enable the learners to equip themselves with disaster response techniques, risk assessment and vulnerability analysis, communication skills, and skills pertaining to the emergency medical requirement. It includes new skills and sharpens existing skills of government officials, voluntary activists, development professionals and elected representatives for effective disaster management.

## **Semester I**

### **Core Paper: I**

**PGDDNSM: 501**

**Understanding Disaster**

**Total Credit- 3**

#### **Course Objective**

The purpose of introducing the course is to develop deep understanding of the concept and various dimensions of disaster and its types.

#### **Unit- I**

1. Hazard, Risk, Vulnerability, Disaster
2. Meaning, Nature, Importance, Dimensions & Scope of Disaster Management
3. Disaster Management Cycle

#### **Unit- II**

1. Natural Disasters- Meaning and nature of natural disasters, their types and effects
2. Hydrological Disasters - Flood, Flash flood, Drought, cloud burst
3. Geological Disasters- Earthquakes, Tsunamis, Landslides, Avalanches, Volcanic eruptions, Mudflow

#### **Unit-III**

1. Accidents- road accidents, rail accidents, air accidents, sea accidents
2. Wind related- Cyclone, Storm, Storm surge, Tidal waves, Heat and cold Waves
3. CBRN – Chemical disasters, biological disasters, radiological disasters, nuclear disasters

### **Suggested Reading :**

1. Alternative Economic Survey, 2004-05, Danish Books, New Delhi.
2. Arbor, Ann, 2003, "Measuring Post Modernism: Placing Urban Planning Values in the Context of a Broader Cultural Values Transition," Paper Presented at the 2003 Distinguished Faculty and Student Symposium: Crossing Disciplinary Boundaries in the Urban and Regional Context, University of Michigan.
3. Center for Research into the Epidemiology of Disasters (CRED), Database, 1997-2001, Belgium.
4. GoI, Economic Survey, 2004-05, GoI, Tenth Plan, 2002-07, Chapter 7, "Disaster Management: The Development Perspective".
5. Goodchild, 1990, "Planning and the modern/post-modern debate", Town Planning Review, Vol. 61, No. 2.
6. Gupta, M.C., Vinod K. Sharma, L.C. Gupta, B.K. Tamani (Eds), 2001, Manual on Natural Disaster Management in India, National Centre for Disaster Management, IIPA.
7. International Strategy for Disaster Reduction at, <http://www.isdr.org>
8. International Red Cross and Red Crescent Societies, "Man-made Disasters", at
9. [www.icrc.org](http://www.icrc.org)
10. Ingelhart, Ronald, 1997, Modernisation and Post Modernisation: Cultural, Economic
11. and Political Change in 43 Societies, Princeton University Press, Princeton, NJ.
12. McLeod, David, 2003, "Post Modernism in Urban Planning", Planning & Environmental
13. Information", at <http://www3.sympatico.ca/David.macleod/PINFO.HTM>

### **Course Outcome**

After completion of this course, the student will be able to:

1. Understand the basic concept, meaning and terminologies associated with disaster.
2. Understand the types, effects and causes associated with disaster.
3. Understand the classification of disasters;
4. Highlight global dimensions of disasters;
5. Have an overview of natural and man-made disasters; and
6. Understand the relationship between development and environment.

**Semester I****Core Paper: II****PGDDNSM: 502****Concept of National Security****Total Credit- 3****Course Objective**

The purpose to introducing the course is to develop deep understanding of the concept and various dimensions of national security with special reference to India.

**Unit-I**

1. Concept of National Security
2. Concept of National Power & National Interests
3. Concept of Human Security

**Unit-II**

1. External Security: Threats and Challenges
2. Internal Security: Threats and Challenges
3. Maritime Security: Threats and Challenges

**Unit-III**

1. Concept of Non Traditional Security
2. Energy Security
3. Environmental Security

**Suggested Reading:**

1. K. Subramanyam, Our National Security, Economic and Scientific Research Foundation
2. Michael Clark, New Perspective on Security; London, 1993.
3. S. D. Sinha, Security in the New World Order, Chanakya Publication, Delhi, 1993.
4. Gautam Sen, India's Security Consideration in Nuclear Age, Atlantic, New Delhi, 1986.
5. Chitrapu Uday Bhaskar, India's Security Concerns.
6. N. S. Sisodia & C. Uday Bhaskar, Emerging India: Security on Foreign Policy Perspectives, IDSA, New Delhi.
7. Barry Buzan, People, States and Fear: The National Security.

## **Course Outcome**

After completion of this course, the student will be able to:

1. Understand the evolution of the concept of national security with the components, nature, dimensions and objectives of it.
2. Understand India's national security threats and challenges in the present world as well as in coming decades.
3. Understand the current needs of India's defence cooperation, strategic partnership and security dialogue with strategically important countries.

## **Semester I**

### **Paper: III (Elective I)**

**PGDDNSM: 503 National Case Studies in Disaster Management      Total Credit- 3**

### **Course Objective**

The purpose of introducing the course is to acquaint with various types of disasters that took place in India. So that students can understand the historical disasters and their impact in India.

#### **Unit-I**

1. Bhopal Gas Tragedy (1984)
2. Flood in Eastern UP (1998)
3. Malpa Landslide (1998)

#### **Unit-II**

1. Odisha Super Cyclone (1999)
2. Gujrat Earthquake (2001)
3. Heat wave in Andhra Pradesh ( 2002)

#### **Unit-III**

1. Tsunami (2004)
2. Uttarakhand Flash Flood ( 2013)
3. Covid -19 Pandemic (2020-2021)

### **Suggested Reading:**

1. Roxy, Mathew Koll; Ritika, Kapoor; Terray, Pascal; Murtugudde, Raghu; Ashok, Karumuri; Goswami, B. N. (2015-06-16). "Drying of Indian subcontinent by rapid Indian Ocean warming and a weakening land-sea thermal gradient". *Nature Communications*. **6**: 7423.
2. Roxy, Mathew Koll; Ritika, Kapoor; Terray, Pascal; Masson, Sébastien (2014-09-11). "The Curious Case of Indian Ocean Warming" (PDF). *Journal of Climate*. **27** (22): 8501–8509. Bibcode:2014JCLI...27.8501R. doi:10.1175/JCLI-D-14-00471.1. ISSN 0894-8755.
3. Atlantic Oceanographic and Meteorological Laboratory, Hurricane Research Division. "Frequently Asked Questions: When is hurricane season?". NOAA. Retrieved 2006-07-25.
4. Sarkar, Uttam; Borah, Bibha (28 June 2017). "Flood plain wetland fisheries of India: with special reference to impact of climate change". *Wetlands Ecology and Management*. **26**: 1–15.
5. Hoegh-Guldberg, Ove; Poloczanska, Elvira S.; Skirving, William; Dove, Sophie (8 June 2018). "Coral Reef Ecosystems under Climate Change and Ocean Acidification". *Frontiers in Marine Science*.
6. Sun, Yuan; Zhong, Zhong; Li, Tim; Yi, Lan; Hu, Yijia; Wan, Hongchao; Chen, Haishan; Liao, Qianfeng; Ma, Chen; Li, Qihua (15 August 2017). "Impact of Ocean Warming on Tropical Cyclone Size and Its Destructiveness". *Scientific Reports*. **7** (1): 8154.
7. Ravindranath, Nijavalli H.; Sathaye, Jayant A. (11 April 2006). *Climate Change and Developing Countries*. Springer Science & Business Media. ISBN 9780306479809 – via Google Books.
8. France-Presse, Agence (20 May 2016). "India records its hottest day ever as temperature hits 51C (that's 123.8F)". *the Guardian*.
9. "India's killer heatwaves claim 4620 deaths in last four years". 23 April 2017.

10. "Effects of climate change: If global warming continues, summers in India could last for 8 months by 2070, say researchers – Firstpost". [www.firstpost.com](http://www.firstpost.com).
11. "Dust storms may increase in India due to climate change". india.mongabay.com. 2018-05-08.
12. Swain, S; et al. (2017). "Application of SPI, EDI and PNPI using MSWEP precipitation data over Marathwada, India". IEEE International Geoscience and Remote Sensing Symposium (IGARSS). **2017**: 5505–5507.

### **Course Outcome**

After completion of this course, the student will be able to:

1. Understand the causes and effects of major historical disasters took place in India
2. Understand the bad impacts of different types of disasters in different regions in India.

## **Semester I**

### **Paper: IV (Elective II)**

**PGDDNSM: 504 Community Linkage In Disaster Management**

**TotalCredit- 3**

### **Course Objective**

The purpose of introducing the course is to develop deep understanding of the various dimensions of community based disaster management

#### **Unit- 1**

1. Community Based Disaster Management
2. Human Behavior and Response: Individual, Community, Institutional
3. Community Participation and Awareness



**Unit- 2**

1. Community Health During Disasters
2. Drinking Water, Food and Nutrition
3. Hygiene and Sanitation

**Unit- 3**

1. Disaster Site Management
2. Remote Area Planning
3. Emergency Health Operations

**Suggested Reading:**

1. Almond, Gabriel and Sidney Verba, 1963, “Event Driven Political Communication etc.”, at <http://www.polisci.umn.edu/undergrad/>
2. Blackburn, J. and J. Holland, 1998, *Who Changes: Institutionalising Participation in Development*, Intermediate Technology Publications, London.
3. Buckland, Jerry and M. Matiur Rahman, 1999, “Community-based Disaster Management during the 1997 Red River Flood in Canada”, *Disasters* 23(2).
4. Cohen, J.M. and N.T. Uphoff, 1980, “Participation’s Place in Rural Development: Seeking Clarity through Specificity,” *World Development*, Vol. 8, No. 30.
5. “Development, Planning and Administration”, 2003, *Course Material for Commonwealth Executive Masters in Public Administration*, Commonwealth of Learning, Vancouver.
6. GSDMA, 2005, “Plain Truth”, *Newsletter*, Gujarat State Disaster Management Authority, Gujarat, India
7. Info-change “Right to Information” at, <http://www.infochangeindia.org/changemakers.jsp>
8. Jain, S., “Standing up for trees: Women’s role in the Chipko Movement”, FAO Corporate Document Repository at <http://www.fao.org/docrep>
9. Knack, Stephen and Phillip Keefer, 1997, “Does Social Capital Have an Economic Payoff: A Cross-Country Investigation”, *the Quarterly Journal of Economics* (4).
10. Kreuter, Marshall, Laura Young and Nicole Lezin, 1998, *Measuring Social Capital in Small Communities*, Study conducted by Health 2000 Inc., Atlanta, in cooperation with the St. Louis University School of Public Health.
11. McMillan, D. and D.W.Chavis, 1986, “Sense of Community; definition and theory,” *Journal of Community Psychology*, 14, 6-2.

**Course Outcome**

After completion of this course, the student will be able to:

1. Understand the significance of community participation in disaster management, especially disaster planning and disaster response; and
2. Understand the modalities for arranging for CBDM

**PGDDNSM: 505 Practical / Project****Total Credit- 6**

1. Warning system- Air Raid warning, Blackout and Defence, Emergency Method of Rescue and self rescue, Casualty handling and Transportation, Fire Fighting, Flood Rescue, landslide Prevention, Earthquake Prevention Measures, Stress management and positive behavior through meditation, visit to nearby sub control centre warden post first aid party fire bridge etc.
2. Survey/ Project report prone/disaster affected areas.

**Semester II****Core Paper: I****PGDDNSM: 506 Disaster Preparedness and Response****Total Credit- 3****Course Objective**

1. The effects of disasters on human lives, property and livestock can be minimised through adequate preparedness. This Course highlights the important facets of disaster prevention, preparedness, and mitigation. Disaster preparedness plan, use and application of emerging technologies, role and responsibilities of various agencies and mitigation strategies constitute the core components of this Course.
2. Disaster response assumes significance in the immediate impact and post-impact phase of disasters. Various aspects of response, such as, minimum standards of relief, management of relief commodities and services, stakeholders' coordination in response, and recovery

are covered in this Course. The Course also deals with the various facets of human behavior and response in disaster situations.

### **Unit-1**

1. Disaster Preparedness: concept and significance
2. Disaster Preparedness Measures
3. Institutional Mechanism for Disaster Preparedness

### **Unit- 2**

1. Concept and Significance of Disaster Preparedness Plan
2. Disaster Preparedness Plan essentials
3. Community Based Disaster Preparedness plan

### **Unit- 3**

1. Role of Information, Education, Communication, and Training
2. Role of Government, International and NGO Bodies
3. Role of Information Technology (IT) in Disaster Preparedness

### **Suggested Reading:**

1. Bhargava, Gopal, 1992, Environmental Challenges and Ecological Disaster-Global Perspective, Mittal Publications, New Delhi.
2. Carter, Nick, 1991, Disaster Management: A Disaster Manager's Handbook, Asian Development Bank, Manila.
3. Chismade, S.R, 1988, "Administrative Precondition for Nation Building", The Indian Journal of Public Administration: April-June.
4. Ghose, Bhaskar, 2001, "The Final Countdown", The Hindustan Times, February 8.
5. Goel, S.L and Ram Kumar (Eds.), 2001, Disaster Management, Deep & Deep, New Delhi.
6. Alternate Economic Survey, 2004-05, The Alternate Economic Survey Group, Daanish Books.
7. American Red Cross, 1998, "Are You Ready for an Earthquake", and "Are You Ready for a Flood" at <http://www.redcross.org>

8. APA Task Force, Gregory A. Leskin, Leslie Morland, Julia Whealing, George Everly, Brett Litz, & Terrance M. Keane, Laura Barbanel, (Ed), Fostering Resilience in Response to Terrorism: Working with Psychologists, at <http://www.apa.org/psychologists/pdfs/firstresponders.pdf>.
9. “Certified First Responder” from Wikipedia the Free Encyclopaedia, at [http://www.enwikipaedia.org/wiki/first/American\\_Red\\_Cross](http://www.enwikipaedia.org/wiki/first/American_Red_Cross)
10. “Citizen Emergency Response Teams”, at <http://www.citizencorps.gov/cert>
11. Dynes, Russell R., 1991, Disaster Reduction: The Importance Of Adequate Assumptions About Social Organization, Disaster Research Center.
12. GOI, Tenth Plan (2002-07), Chapter, 7, “Disaster Management: The Development

### **Course Outcome**

After completion of this course, the student will be able to:

1. Understand the approach of the United Nations towards preparedness and the response of the government at all levels in India.
2. Analyse the culture of preparedness and quick response as well as organizational issues involved in preparedness in India.
3. Examine requirements in earthquake risk mitigation.
4. Discuss measures to strengthen response.

## **Semester II**

### **Core Paper: II**

**PGDDNSM: 507 Role of Various Agencies in Disaster Management      Total Credit- 3**

### **Course Objective**

The purpose of introducing the course is to develop deep understanding of the various agencies in (Government and NGOs) disaster management

#### **Unit- 1**

1. National Disaster Management Authority (NDMA)
2. State Disaster Management Authority (SDMA)

3. United Nation office for Disaster Risk Reduction (UNISDR)

## Unit- 2

1. National Institute of Disaster Management (NIDM)
2. National Disaster Risk Reduction and Management Council (NDRRM)
3. National Disaster Response Force (NDRF)

## Unit- 3

1. Role of Fire Service
2. Role of Armed Force
3. Role of Civil Defence and Home Guard

## Suggested Reading:

1. Carter, W. Nick, 1991, Disaster Management: A Disaster Manager's Handbook, Asian Development Bank, Manila.
2. Gupta, Harsh K, 2003, Disaster Management, University Press, Hyderabad.
3. Sahni, Pardeep, Alka Dhameja and Unla Medury (Eds.), 2001, Disaster Mitigation: Experiences and Reflections, Prentice-Hall of India, New Delhi.
4. Human Development Report, 1999, World Bank, Oxford University Press, Oxford.
5. Sahni, Pardeep and Madhavi Malalgoda Ariyabaridu (Eds.), 2003, Disaster Risk Reduction in South Asia, Prentice-Hall of India, New Delhi.
6. Medury, Uma, 2001, "Coping with Disasters: A Community-based Approach" in Pardeep Sahni et al. (Eds.), Disaster Mitigation: Experiences and Reflections, pp. cit.
7. Medury, Uma and Alka Dhameja, 2005, "Rehabilitation of Cyclone Affected People" in Amita Singh (Ed.), *Alternative Approaches: Towards Sustainable practice*, Sage, New Delhi.

## Course Outcome

After completion of this course, the student will be able to:

1. Highlight the framework for coordination of disaster management process at different governmental levels

2. Examine the relevance of community participation
3. Discuss the role of NGOs and other important agencies involved in disaster management.

## **Semester II**

### **Paper: III (Elective -I)**

**PGDDNSM: 508 Global Case Studies in Disaster Management Total Credit- 3**

#### **Course Objective**

The purpose of introducing the course is to acquaint with various types of disasters that took place in Global level. So that students can understand the historical disasters and their impact in Global level.

#### **Unit- I**

1. Chernobyl Nuclear Disaster (1986)
2. 9/11 USA (2001)
3. Hurricane Katrina (2005)

#### **Unit- II**

1. Japan's Tohoku Earth Quake (2011)
2. Fukushima Nuclear Disaster (2011)
3. Sandy Hurricane

#### **Unit – III**

1. China Floods (2016)
2. Covid-19 Pandemic (2020-21)
3. Nepal Earthquake (2015)

#### **Suggested Reading:**

1. "NOVA Online | Flood! | Dealing with the Deluge". PBS. Retrieved August 11,2010.
2. April 2018, Stephanie Pappas-Live Science Contributor 02. "Top 11 Deadliest Natural Disasters in History". livescience.com.

3. "Top 10 Deadliest Earthquakes". Time. January 13, 2010. Archived from the original on January 17, 2010. Retrieved May 8, 2010.
4. Research, CNN Editorial. "Haiti Earthquake Fast Facts". CNN.
5. Paula Dunbar. "Significant Earthquake". Ngdc.noaa.gov. Retrieved February 13, 2014.
6. "The Worst Natural Disasters by Death Toll" (PDF). National Oceanic and Atmospheric Administration. April 6, 2008. Retrieved March 11, 2011.
7. "Death toll of 1920 China earthquake higher than previously estimated". Xinhua News Agency. Retrieved February 13, 2014.
8. "Mortality, crime and access to basic needs before and after the Haiti earthquake: a random survey of Port-au-Prince households". Taylor Francis Online. doi:10.1080/13623699.2010.535279.
9. "Global Catastrophe Recap: December 2014" (PDF). Aon Benfield Analytics. Retrieved May 26, 2020.
10. Guidelines for Preparation of Action Plan – Prevention and Management of Heat-Wave (PDF) (Report). National Disaster Management Authority Government of India. 2017.

### **Course Outcome**

After completion of this course, the student will be able to:

1. Understand the causes and effects of major historical disasters took place in global level.
2. Understand the bad impacts of different types of disasters in different regions in global level.

## **Semester II**

### **Paper: IV (Elective II)**

**PGDDNSM: 509 Reporting, Information and Documentation in Disasters Total Credit- 3**

### **Course Objective**

The purpose of introducing the course is to acquaint with various aspect reporting, information and documentation in disaster management. This course also contain the factors that give rise to differential vulnerabilities and levels of community resilience Data, methods, tools,

and geospatial techniques (including GIS) that can enhance vulnerability assessments and knowledge building.

### **Unit- 1**

1. Types of Media
2. Importance of role of Media- informative, suggestive and analytical
3. Role of Media in Disaster Mitigation

### **Unit- 2**

1. Factual and Ethical Reporting
2. Impact of Media Coverage and Handling Media
3. Public Communication

### **Unit- 3**

1. Role of Communication in Disasters, Types of communication in case of disasters – HAM, radio, Satellite, Video Conferencing, Electronic devices
2. Methods of collecting relevant information- libraries, internet, interviews
3. Role of Information from disaster affected community

### **Suggested Reading:**

1. Rodriguez, H., W. Diaz, J.M. Santos and B. E. Aguirre. 2007. Chapter 29 —Communicating Risk and Uncertainty: Science , Technology, and Disasters at the Crossroads in H. Rodriguez, E.L. Quarantelli and R.R. Dynes (Eds). Handbook of Disaster Research. New York, NY: Springer
2. Longstaff, P.H. and Yang, Sung-Un. (2008). Communication management and trust: Their role in building resilience to surprises such as natural disasters, pandemic flu, and terrorism. Ecology and Society 13(1)<http://www.abcperu.org/doc/isis/8551.pdf>
3. Lindell, Mike, Carla Prater, and Ronald Perry. 2006. Fundamentals of Emergency Management, Chapters 4. —Risk Perception and Communication. <http://training.fema.gov/EMIWeb/edu/fem.asp>



4. Moritz, M.J. (2006). Covering the News —come hell and high water: Journalists in a Disaster. Pp. 353-372 in Learning from Catastrophe: Quick Response Research in the Wake of Hurricane Katrina. Boulder, Colorado: Natural Hazards Center
5. Gladwin, H. and W.G. Peacock (1997). Warning and Evacuation: A Night for Hard Houses. Chapter 4, in W.G. Peacock, B.H. Morrow and H. Gladwin (Eds.). Hurricane Andrew: Ethnicity, Gender and the Sociology of Disasters. College Station, TX: Hazard Reduction and Recovery Center.
6. Fischhoff, B (1995). Risk perception and communication unplugged: Twenty years of Process. Risk Analysis, 15(2):137-145 <http://www.soc.iastate.edu/Sapp/Fischhoff.pdf>
7. Sandman, P.M. (1988). Risk Communication: Facing public outrage. Management Communication Quarterly, 2, 235 – 238

### **Course Outcome**

After completion of this course, the student will be able to:

1. Understand the comprehensive emergency management from a planning and policy perspective.
2. Understanding of the factors that give rise to differential vulnerabilities and levels of community resilience Data, methods, tools, and geospatial techniques (including GIS) that can enhance vulnerability assessments and knowledge building.

### **PGDDNSM: 510**

### **Practical/ Project**

### **Total Credit- 6**

1. Local Area disaster Management plan exercise Weapons of Mass destruction Nuclear, Chemical and Biological hazards effects preventive measure. Interface with other agencies e.g. Police, Fire Brigade Civil Defence. Bandages and its types wounds treatment casually lashing on stretcher & transportation, Emergency method of rescue and self defence, Mock Drill.
2. Tour report on Disaster effected areas.