

SWAMI VIVEKANAND UNIVERSITY

SIRONJA, SAGAR (M.P.)



SCHEME & SYLLABUS
For
DIPLOMA IN DISASTER MANAGEMENT

Course Code: DDM

Department of Disaster Management

Duration of Course: 1 Year

Examination Mode: Yearly

Examination System: Non- Grading

Swami Vivekananda University, Sironja, Sagar (M.P.)



Faculty: Management

Department: Disaster Management

Course Name: Diploma in Disaster Management

Course Code: DDM

Mode-Yearly

Course Code	Title of the paper	Distribution of Marks				Total
		External		Internal		
		Max	Min	Max	Min	
DDM-101	Introduction to Disaster Management	70	25	30	11	100
DDM-102	ICT for Disaster Management	70	25	30	11	100
DDM-103	Industrial Disaster Management	70	25	30	11	100
DDM-104	Risk Assessment and Vulnerability Analysis	70	25	30	11	100
DDM-105	Disaster Preparedness	70	25	30	11	100
DDM-106	Disaster Response	70	25	30	11	100
DDM-107	Recovery, Reconstruction And Rehabilitation	70	25	30	11	100
DDM-108	Project/Dissertation	-	-	100	36	100
	Grand Total	490		310		800



INTRODUCTION TO DISASTER MANAGEMENT

Subject Code: DDM-101

Max Marks: 70

Min. Pass Marks: 25

UNIT-I

Marks-14

Introduction: Hazard, Risk, Vulnerability, Disaster; Disaster Management, Meaning, Nature Importance, Dimensions & Scope of Disaster Management, Disaster Management Cycle; National disaster management framework; financial arrangements for Disaster management, International Strategy for Disaster reduction

UNIT-II

Marks-14

Natural Disasters: Natural Disasters- Meaning and nature of natural disasters, their types and effects; Hydrological Disasters - Flood, Flash flood, Drought, cloud burst; Geological Disasters- Earthquakes, Landslides, Avalanches, Volcanic eruptions, Mudflow ; Wind related- Cyclone, Storm, Storm surge, tidal waves; Heat and cold Waves, Climatic Change, Global warming, Sea Level rise, Ozone Depletion

UNIT-III

Marks-14

Manmade Disaster: CBRN – Chemical disasters, biological disasters, radiological disasters, nuclear disasters; Fire – building fire, coal fire, forest fire, Oil fire; Accidents- road accidents, rail accidents, air accidents, sea accidents; Pollution and deforestation- air pollution, water pollution, deforestation, Industrial wastewater pollution, deforestation

UNIT-IV

Marks-14

Disaster Determinants: Factors affecting damage – types, scale population, social status, habitation pattern, physiology and climate; Factors affecting mitigation measures, prediction, preparation, communication, area and accessibility, population, physiology and climate,

UNIT-V

Marks-14

National Disaster Management Framework: National Vision, High Powered Committee report, Road Map of Disaster Management, Disaster Management Act.

Suggested readings:

1. Disaster Administration and Management, Text & Case studies- SL Goel-Deep and Deep Publications
2. Disaster Management- G.K Ghosh-A.P.H. Publishing Corporation
3. Disaster management – S.K.Singh, S.C. Kundu, Shobha Singh A – 119, William Publications, New Delhi.
4. Disaster Management – Vinod K Sharma- IIPA, New Delhi,1995
5. Encyclopedia of Disaster Management- Goel S.L. - Deep and Deep Publications, New Delhi, 2006.



ICT FOR DISASTER MANAGEMENT

Subject Code: DDM-102

Max Marks: 70

Min. Pass Marks: 25

UNIT-I

Marks-14

Computer Systems: Computer, Basic Organization of Computers, Classification of Computers, Hardware, Software, Computer Languages, Computer Memory, Types of Memory (Primary And Secondary), Secondary Storage Devices , I/O Devices, Application software, Software Package, Operating Systems, Database Management System, Data Warehousing and Data Mining

UNIT-II

Marks-14

Information Communication Technology: Business Data Processing- Data storage hierarchy, methods of organizing data, file management Data Communications and Computer Networks- Elements of Communication Systems, Data transmission modes, speed, media; Digital and Analog data transmission, Switching techniques, Routing Techniques, Network topologies, Network Types, Communication protocols, wireless networks, Internet, multimedia

UNIT-III

Marks-14

Information Processing: Definition , difference between Data and Information, Relevance of Information to Decision, Making, Source and Types of Information, Quality of Information, Value of information, Data Collection methods, Assessing Information Needs, Management Information Systems, Decision Making Concept-Models of Decision Making

UNIT-IV

Marks-14

Advanced Information Communication Technology: Tsunami Early Warning System, Forest Resource Information System, GIS, Remote Sensing, Digital Image Processing, emergency communication System, Bluetooth and Wireless communication, HAM Radio.

UNIT-V

Marks-14

Disaster Management Information Sources

Forecasting & warning: Indian meteorological department, tsunami warning centre, pacific disaster centre, central water commission; **Resources:** UNISDR, USAID, Red Cross , Indian disaster resource network; **Other :** National disaster management authority, National Institute of disaster management, National Geophysical Research Institute, National disaster response force, State and district disaster management centre

Suggested Readings:-

1. Computer Fundamentals- P. K. Sinha, BPB Publications
2. Fundamentals of Computers - V.Rajaraman - PHI Publication , IVth Edition
3. Fundamentals of Remote Sensing - Noam Levin, November 1999
4. Introduction to Remote Sensing - Dr Robert Sanderson - New Mexico State University



INDUSTRIAL DISASTER MANAGEMENT

Subject Code: DDM-103

Max Marks: 70

Min. Pass Marks: 25

UNIT-I

Marks-14

Introduction: Concept, Need and Importance of Industrial Disaster Management

UNIT-II

Marks-14

Industrial Hazards: Chemical hazards, Biological hazards, Radiological hazards, nuclear hazards, Physical hazards, Electrical hazards, Fire hazard, Gas hazards etc.

UNIT-III

Marks-14

Risk Assessment: Checklist procedure, Preliminary hazard analysis, What if analysis, Failure mode effect analysis, Hazard and operability (HAZOP) studies, Hazard analysis techniques: Fault tree analysis, Event tree analysis, General outline of DOW index, Risk estimation and management, Major hazard control

UNIT-IV

Marks-14

Hazard Identification: Identification of hazard, Categorization methods for elimination of hazard, Mechanical hazards; Machine guarding, safety with hand tools/ portable power tools, Pressure vessel hazards and their control, Safety in material handling: hazards and safe Practices, safety with storage of materials

UNIT-V

Marks-14

Disaster Management Plans: Onsite Plans: Standard operating procedures, control room, safety officer, and Different committees for Disaster management, rescue team, training, exercises and mock drills

Offsite Plans: Dissemination of information, identification of vulnerable locations, need and damage Assessment, rescue and relief plans, compensation

Suggested Readings:-

1. Disaster Administration and Management, Text & Case studies- SL Goel-Deep and Deep Publications
2. Hazardous Materials Disaster Management-Arunkumar Talwar, Coomn wealth Publisher
3. Heinrich H.W. "Industrial Accident Prevention" McGraw-Hill Company, New York, 1980 "Safety in Industry" N.V. Krishnan Jaico Publishery House, 1996



RISK ASSESSMENT AND VULNERABILITY ANALYSIS

Subject Code: DDM-104

Max Marks: 70

Min. Pass Marks: 25

UNIT-I

Marks-14

Introduction: Hazard, Risk and Vulnerability, Risk Concepts, Elements Of Risk, Perception of Risk, Acceptable risk, Requirements in Risk assessment

UNIT-II

Marks-14

Risk Assessment & Reduction: Risk Reduction- Mainstreaming “Risk”, Role of science and technology in Disaster Risk Reduction, Strategies of Risk reduction, International Mobilization of Risk reduction; Risk analysis techniques- Process of Risk assessment, Analytical systems for risk assessment, Natural hazard/ risk assessment, Understanding climate risk, Mapping of risk assessment, Decision making for risk reduction, Problems in risk assessment; Participatory risk assessment:- Rationale for people’s participation, Role of civil society organizations, Impact of Globalization, Activities and roles for the community action Risk reduction, Participatory risk assessment methods

UNIT-III

Marks-14

Vulnerability analysis: Addressing Semantics, Approaches to vulnerability Analysis, Models of Vulnerability analysis, Quantification of vulnerability, Assessment of Risk Vulnerability and capacity analysis (VCA), Vulnerability of Himalayan Eco- system
Hazard mapping using GIS, Use of remote sensing and GIS for risk assessment, multi hazard risk analysis using GIS

UNIT-IV

Marks-14

Vulnerability: Observation and perception of vulnerability- Vulnerability Identification, Vulnerability types and dimensions, Vulnerability- Social factors and economic factors; Vulnerability to shanty settlements- Vulnerability in the city, Risk in Urban areas, Issues in urban planning, Initiatives for risk reduction in India

UNIT-V

Marks-14

Strategic development for Vulnerability reduction: physical & social infrastructure for Vulnerability reduction, Interactive areas for Vulnerability reduction & Policy making, Hazard resistant designs and construction, System management Strategic planning for vulnerability reduction.

Suggested Readings:

1. Disaster Administration and Management, Text & Case studies- SL Goel-Deep and Deep Publications
2. Disaster Management- G.K Ghosh-A.P.H. Publishing Corporation
3. Disaster management – S.K.Singh, S.C. Kundu, Shobha Singh A – 119, William Publications, New Delhi.
4. Disaster Management – Vinod K Sharma- NIDM, New Delhi



DISASTER PREPAREDNESS

Subject Code: DDM-105

Max Marks: 70

Min. Pass Marks: 25

UNIT-I

Marks-14

Introduction: Disaster Management Cycle, Disaster Preparedness: concept and significance, Disaster Preparedness Measures, Institutional Mechanism for Disaster Preparedness, Disaster preparedness with special needs/ vulnerable groups, Disaster Preparedness: Policy and Programmes

UNIT-II

Marks-14

Disaster Preparedness Plan: Concept and Significance, Disaster Preparedness Plan essentials, Community Based Disaster Preparedness plan

UNIT-III

Marks-14

Disaster Preparation: Material, relief required- sources of relief, modes and means of transport, medical facility and communication network, Preparation of manpower, awareness of damages, perception, and reaction time. Authority: Hierarchy set-up, direction of communication

UNIT-IV

Marks-14

Hazard Assessment: Hazard monitoring, tracking and modeling, Early warning systems, warning protocols, India Disaster Resource Network, Emergency Sanitation/Shelter environments, worst; scenario analysis, Emergency operation Centre, Role of Information, Education, Communication and Training

UNIT-V

Marks-14

Emerging Technologies in Disaster Management: Remote sensing, Disaster Mapping, Aerial Photography, land use zoning, Wireless and Radio, HAM radio

Suggested Readings:

1. Disaster Administration and Management, Text & Case studies- SL Goel Deep and Deep Publications
2. Natural Hazards And Disaster Management : Vulnerability And Mitigation R B Singh-Rawat Publications
3. Disaster Management- G.K Ghosh - A.P.H. Publishing Corporation
4. Disaster management – S.K.Singh, S.C. Kundu, Shobha Singh A – 1William Publications, New Delhi.
5. Disaster Management – Vinod K Sharma- IIPA, New Delhi,1995



DISASTER RESPONSE

Subject Code: DDM-106

Max Marks: 70

Min. Pass Marks: 25

UNIT-I

Marks-14

Introduction: Essential Components of Disaster Response, Disaster Response Plan, Resource Management- Financial, Medical, equipments, communication, Human, transportation, Food and essential commodity (Identification, Procuring, Propositioning and deployment), Directing and controlling functions Communication, Participation & activation of Emergency Preparedness Plan, Logistics Management, Emergency support functions, Need and damage assessment

UNIT-II

Marks-14

Coordination in Disaster Response: Disaster response organization, Disaster response & administration - Central, State, District and Local, Disaster Response: Policy & Other organization, Role of multiple stakeholders in Disaster Response NDRF, SDRF, ITBP, CRPF, SRPF, and EMS

UNIT-III

Marks-14

Quick Disaster Response: First responder, medical first aid, life saving techniques, Golden time; Search & Rescue equipments- Search & Rescue equipments for different disasters, its use, procurement, maintenance;

UNIT-IV

Marks-14

Search & Rescue: Teams- Warning teams, evacuation teams, medical support, logistic management & other teams; Individual and Group behavior, Psychological Response, Trauma & Stress Management, Rumor & Panic Management

UNIT-V

Marks-14

Relief Measures: Relief measures, Minimum standards of relief, managing relief, Funding relief, Recovery

Suggested Readings:

1. Disaster Administration and Management, Text & Case studies- SL Goel-Deep and Deep Publications
2. Disaster Planning and Recovery- Levitt, Alan M - John Valley and Sons, New York, 1997.
3. National Disaster Response Plan - Ministry of Agriculture and Cooperation, Government of India, New Delhi: 2002
4. National Disaster Response Plan, NCDM, New Delhi, 2001
5. Disaster management – S.K.Singh, S.C. Kundu, Shobha Singh A – 119, William Publications, New Delhi.
6. Disaster Management – Vinod K Sharma- NIDM, New Delhi



RECOVERY, RECONSTRUCTION AND REHABILITATION

Subject Code: DDM-107

Max Marks: 70

Min. Pass Marks: 25

UNIT-I

Marks-14

Rehabilitation, Reconstruction and Development: Reconstruction Rehabilitation and Development- Concept, Meaning, types of Rehabilitation and Reconstruction, Importance of Disaster Mitigation, Cost – benefit analysis, relationship between vulnerability and development
Damage Assessment- Post Disaster Damage assessment, estimated damage assessment due to probable disasters, Sample Surveys, Epidemiological Surveillance, Nutrition Centered Health Assessment, Remote sensing and Aerial photography, nature and damage to houses and infrastructure due to different disasters

UNIT-II

Marks-14

Role of Different organization in Rehabilitation: The Government and Disaster Recovery and rehabilitation; Disaster and Nongovernmental efforts; Role of Local Institutions; Insurance, Police, Media

UNIT-III

Marks-14

Reconstruction: Speedy Reconstructions- Essential services, Social infrastructures, immediate Shelters/camps, Contingency plans for reconstructions, Development of Physical and Economic Infrastructure- Developing Physical and Economic Infrastructure, Environmental Infrastructure development, Disaster resistant House Construction- Guidelines for Disaster resistant construction, traditional techniques, Seismic strengthening of houses in low rain/High rainfall area, earthquake resistant construction technique, Funding arrangements- Funding arrangements at state level and central level, Fiscal discipline, role of International agencies, mobilization of community for resource generation

UNIT-IV

Marks-14

Rehabilitation: Socio- economic Rehabilitation- Temporary Livelihood Options and Socio-Economic Rehabilitation; Role of Housing / building authorities- Education and awareness and role of Information; Dissemination, Participative Rehabilitation; Role of various agencies in Recovery Work- Monitoring and evaluation of rehabilitation work, Rehabilitation process

UNIT-V

Marks-14

Recovery: Concept of recovery, livelihood and approach to reconstruction, Livelihood restoration, Speedy recovery, Linking Recovery with safe development, Creation of Long-term job opportunities,

Suggested Readings:

1. Asian Development Bank, Disaster Mitigation in Asia and the Pacific, Manila ADB, 1991.
2. Disaster Administration and Management, Text & Case studies- SL Goel-Deep and Deep Publications
3. Disaster Management- G.K Ghosh-A.P.H. Publishing Corporation



4. Disaster management – S.K.Singh, S.C. Kundu, Shobha Singh A – 119, William Publications, New Delhi.
5. Disaster Management – Vinod K Sharma- IIPA, New Delhi,1995
6. Encyclopedia of Disaster Management- Goel S.L. - Deep and Deep Publications, New Delhi, 2006.
7. Post-Earthquake Rehabilitation and Reconstruction , F.Y. Cheng, Y.Y. Wang, Permagon Publications



Project/Dissertation

Subject Code: DDM-108

Max Marks: 100

Min. Pass Marks: 36

TOPIC: CASE STUDY WITH SURVEY:

Disaster affected Area: Cyclone – Orissa 1999 Super Cyclone, Flood – Bihar floods, Tsunami – Tsunami of South India, Heat waves – Heat waves of Andhra Pradesh and Odisha and Cold waves – Cold waves of U.P., Earthquakes – Bhuj Earthquakes, Landslides – landslides in North East, Drought, Storm, Global warming; Air Pollution – Bhopal Gas Tragedy, Forest fire, Industrial waste, Shelter Home: Cyclone

Any topic relevant to either Natural Disasters or Man-Made Disasters. Students have to do a survey and submit a report relevant to Disaster Management in a particular region