Syllabus for
Diploma in Disaster Management (DDM)
for Academic Session 2016-17

Programme Objective:

1. The Programme has been framed with an intention to provide a general concept in the dimensions of disasters caused by nature beyond human control as well as the disasters and environmental hazards induced by human activities with emphasis on Natural disaster, Man-made disaster, Application of GIS and ICT in Preparedness, Response, Rehabilitation and Recovery.
2. It is innovative, skill and employment oriented to attract bright students to the discipline of Disaster Management. Thus, ensuring University – Industry interface in Skill-based education.

Duration: 1 Year   **Total Credits: 32**

Course No.	Course Title	Block	Unit	Credits
Semester -1				
DDM-01	**Introduction to Disaster Management**	6	18	6
DDM-02	**Geographical Information System and ICT in Disaster Management**	6	23	6
DDM-03	**Risk Assessment and Vulnerability Analysis**	4	12	4
Semester -2				
DDM-04	**Disaster Preparedness and Response**	6	20	4
DDM-05	**Recovery, Rehabilitation and Reconstruction**	6	16	4
DDM-06	**Reporting, Information and Documentation in Disasters**	4	08	8
		32	97	32

Course – I (6 Credits)

Introduction to Disaster Management

Block – I: Introduction

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

Block – II: Natural Disasters

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

Block – III: Types of Natural Disasters

Unit - 1	Wind related- Cyclone, Storm, Storm surge, Tidal waves, Heat and cold Waves
Unit - 2	Climatic Change
Unit - 3	Global warming
Unit - 4	Sea Level rise
Unit - 5	Ozone Depletion

Block – IV: Man – made Disasters

Unit - 1	CBRN – Chemical disasters, biological disasters, radiological disasters, nuclear disasters
Unit - 2	Fire – building fire, coal fire, forest fire, Oil fire

Block – V: Types of Man – made Disasters

Unit - 1	Accidents- road accidents, rail accidents, air accidents, sea accidents
Unit - 2	Pollution - air pollution, water pollution
Unit - 3	Deforestation, Industrial waste

Block – VI: Disaster Determinants

Unit - 1	Factors affecting damage – types, social status, habitation pattern, physiology and climate
Unit - 2	Factors affecting mitigation measures, prediction, preparation, communication, area and accessibility, population, physiology and climate

Course – II (6 Credits)

Geographical Information System and ICT in Disaster Management

Block – I: Geographical Information System (GIS)

Unit - 1	Definition of GIS, Concept of Space and Time, Spatial data
Unit - 2	Map Projection and Datum
Unit - 3	Domains of Spatial information system, Components of GIS (/Hardware, Software, Data, People and Process)
Unit - 4	GIS Functionalities for end user / system (Data Acquisition, Data Input, Data Management, Data Analysis, Data Modeling and Data Output)
Unit - 5	Web based GIS Technology

Block – II: Remote Sensing

Unit - 1	Introduction to Remote Sensing, Fundamentals of Remote Sensing, Electromagnetic Radiation, Electromagnetic Spectrum, Energy interaction with Atmosphere, Energy interaction with Earth Surface, Platform and Sensors
Unit - 2	Characteristics of Image, Image Interpretation and Analysis – Visual Image Interpretation & Digital Image Processing
Unit - 3	Microwave Remote Sensing
Unit - 4	Remote Sensing Application in Disaster Management
Unit - 5	Scenario of Indian Remote Sensing Satellites in future

Block – III: Advanced Technologies for Warning System

Unit - 1	Definition of Early Warning System, Community Early Warning System, Core Components of People centered Early Warning System
Unit - 2	Emergency Communication System, Wireless Communication, Bluetooth Wireless Technology, HAM Radio, GPS Application in Emergency Communication
Unit - 3	Remote Sensing and GIS Application in Warning System
Unit - 4	Cyclone Warning System and Tsunami Warning System

Block – IV: Computer Application

Unit - 1	Introduction to computer, its components and functions, Data Storage: Primary and Secondary storage, Introduction to various computer devices such as keyboard, mouse, printers, disk files, floppies etc
Unit - 2	Operating systems such as DOS, Windows and UNIX
Unit - 3	Use of MS-Office Package, MS Word, MS Excel, MS Access
Unit - 4	Use of Internet

Block – V: Importance of Information in Disasters

Unit - 1	Methods of collecting relevant information – libraries, internet, interviews questionnaires, survey, observation, Mass media, Meetings
Unit - 2	Role of Information from disaster affected community

Block – VI: Role of Information Technology in Disasters

Unit - 1	Disaster management Information System
Unit - 2	Organizing and effective dissemination of information: feedback for improving information

Unit - 3	Role of Communication in Disasters, Types of communication in case of disasters –HAM radio, Satellite, Video Conferencing, Electronics devices

Course – III (4 Credits)

Risk Assessment and Vulnerability Analysis

Block – I: Introduction

Unit - 1	Risk Concepts, Elements Of Risk, Perception of Risk, Acceptable risk, Requirements in Risk assessment
Unit - 2	Risk Reduction-Mainstreaming "Risk"
Unit - 3	Role of science and technology in Disaster Risk Reduction
Unit - 4	Strategies of Risk reduction, International Mobilization of Risk reduction

Block – II: Risk Assessment & Reduction

Unit - 1	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
Unit - 2	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

Block – III: Vulnerability

Unit - 1	Observation and perception of vulnerability- Vulnerability Identification, Vulnerability types and dimensions, Vulnerability- Social factors and economic factors
Unit - 2	Vulnerability to shanty settlements; Vulnerability in the city, Risk in Urban areas, Issues in urban planning, Initiatives for risk reduction in India

Block – IV: Strategic development for Vulnerability reduction

Unit - 1	Physical & Social infrastructure for Vulnerability reduction
Unit - 2	Interactive areas for Vulnerability reduction & Policy making
Unit - 3	Hazard resistant designs and construction
Unit - 4	Systematic management and Strategic planning for vulnerability reduction

Course – IV (4 Credits)

Disaster Preparedness and Response

Block – I: Disaster Preparedness

Unit - 1	Disaster Preparedness: concept and significance
Unit - 2	Disaster Preparedness Measures
Unit - 3	Institutional Mechanism for Disaster Preparedness
Unit - 4	Disaster preparedness with special needs/ vulnerable groups
Unit - 5	Disaster Preparedness: Policy and Programmes
Block – II: Disaster Preparedness Plan	
Unit - 1	Concept and Significance of Disaster Preparedness Plan
Unit - 2	Disaster Preparedness Plan essentials
Unit - 3	Community Based Disaster Preparedness plan
Unit - 4	Prediction, Early Warnings and Safety Measures of Disaster
Block – III: Role of Different Organizations / Institutions	
Unit - 1	Role of Information, Education, Communication, and Training
Unit - 2	Role of Government, International and NGO Bodies
Unit - 3	Role of Information Technology (IT) in Disaster Preparedness
Unit - 4	Role of Geographers on Disaster Management
Block – IV: Disaster Response	
Unit - 1	Essential Components of Disaster Response, Disaster Response Plan, Resource Management- Financial, Medical, equipment, communication, Human, transportation, Food and essential commodity (Identification, Procuring, Propositioning and deployment), Directing and controlling functions
Unit - 2	Communication, Participation & activation of Emergency Preparedness Plan, Logistics Management, Emergency support functions, Need and damage assessment
Block – V: Coordination in Disaster Response	
Unit - 1	Disaster Response Plan - Communication, Participation, and Activation of Emergency Preparedness Plan
Unit - 2	Search, Rescue, Evacuation and Logistic Management
Block – VI: Psychological Response and Management	
Unit - 1	Psychological Response and Management (Trauma, Stress, Rumor and Panic)
Unit - 2	Relief and Recovery
Unit - 3	Medical Health Response to Different Disasters

Course – V (4 Credits)
Recovery, Rehabilitation and Reconstruction
Block – I: Rehabilitation, Reconstruction and Development
Unit - 1	Rehabilitation, Reconstruction and Development-Concept, Meaning, Types of Rehabilitation and Reconstruction

Unit - 2	Importance of Disaster Mitigation, Cost – benefit analysis, relationship between vulnerability and development
Unit - 3	Damage Assessment- Post Disaster Damage assessment, estimated damage assessment due to probable disasters
Unit - 4	Sample Surveys, Epidemiological Surveillance, Nutrition Centered Health Assessment, Remote sensing and Aerial photography, nature and damage to houses and infrastructure due to different disasters

Block – II: Role of Different Organizations in Rehabilitation

Unit - 1	The Government and Disaster Recovery and rehabilitation
Unit - 2	Disaster and Non Governmental efforts
Unit - 3	Role of Local Institutions; Insurance, Police, Media

Block – III: Reconstruction

Unit - 1	Speedy Reconstructions- Essential services, Social infrastructures, Immediate shelters/camps, Contingency plans for reconstructions
Unit - 2	Development of Physical and Economic Infrastructure- Developing Physical and Economic Infrastructure, Environmental Infrastructure development

Block – IV: Disaster Resistant House Construction

Unit - 1	Guidelines for Disaster resistant construction, traditional techniques, Seismic strengthening of houses in low rain/High rainfall area, earthquake resistant construction technique
Unit - 2	Funding arrangements- Funding arrangements at state level and central level, Fiscal discipline, role of International agencies, mobilization of community for resource generation

Block – V: Rehabilitation

Unit - 1	Rehabilitation - Socio- economic Rehabilitation- Temporary Livelihood Options and Socio-Economic Rehabilitation
Unit - 2	Education and awareness and role of Information Dissemination, Participative Rehabilitation
Unit - 3	Role of various agencies in Recovery Work- Monitoring and Evaluation of rehabilitation work, Rehabilitation process

Block – VI: Recovery

Unit - 1	Concept of recovery, livelihood and approach to reconstruction, Livelihood restoration
Unit - 2	Speedy recovery, Linking Recovery with safe development, Creation of Long-term job opportunities

Course – VI (8 Credits)

Reporting, Information and Documentation in Disasters

Block – I: Media	
Unit - 1	Types of Media
Unit - 2	Importance of role of media – informative, suggestive and analytical
Unit - 3	Role of Media in Disaster Mitigation
Block – II: Reporting	
Unit - 1	Factual and Ethical Reporting
Unit - 2	Impact of Media Coverage and Public Communication and Handling of Media
Block – III: Documentation	
Unit - 1	Principles of Report Writing and Guidelines according to style manuals
Unit - 2	Writing and Presentation of Preliminary, Main body and Reference section of Report, Evaluation of Research Report
Block – IV: Dissertation / Project Report *	
Unit - 1	TOPIC / CASE STUDY: 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 OR Any topic relevant to either Natural Disaster or Man-Made Disaster.

N.B.: The student shall choose a Dissertation / Project Topic at the end of the 1st semester. He / She should submit Project Report by 30th April.

* 04 Credits will be awarded for the Project Report.