

MASTER OF ARTS IN DISASTER MANAGEMENT
DETAILED SYLLABUS

SEMESTER FIRST

PAPER – 101

INTRODUCTION TO DISASTER MANAGEMENT

Objectives

- To orient students about various natural and manmade disasters
- To teach the concept of Disaster management and measures to be taken at different stages of disaster management
- To provide insight about global, national and regional level scenario of disaster management

Module 1 –Introduction

Unit 1: Hazard, Risk, Vulnerability, Disaster;

Unit 2: Disaster Management, Meaning, Nature Importance, Dimensions & Scope of Disaster Management, Disaster Management Cycle.

Unit 3 : National disaster management framework; financial arrangements for Disaster management, International Strategy for Disaster reduction.

Module 2 – 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, Landslides, Avalanches, Volcanic eruptions, Mudflow

Unit 4: Wind related- Cyclone, Storm, Storm surge, tidal waves

Unit 5: Heat and cold Waves, Climatic Change, Global warming, Sea Level rise, Ozone Depletion

Module 3 – Man made Disaster

Unit 1: CBRN – Chemical disasters, biological disasters, radiological disasters, nuclear disasters

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Unit 2: Fire – building fire, coal fire, forest fire, Oil fire

Unit 3 Accidents- road accidents, rail accidents, air accidents, sea accidents

Unit4: Pollution and deforestation- air pollution, water pollution, deforestation, Industrial wastewater pollution, deforestation

Module 4 Disaster Determinants

Unit 1 Factors affecting damage – types, scale population, social status, habitation pattern, physiology and climate.

Unit 2: Factors affecting mitigation measures, prediction, preparation, communication, area and accessibility, population, physiology and climate,

Course Outcome:

Students will learn different disasters and measures to reduce the risk due to these disasters. Also, students will learn institutional frame work for disaster management at national as well as global level

Suggested readings:

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

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PAPER – 102
RESEARCH METHODOLOGY IN DISASTER MANAGEMENT

Objectives:

To instill a comprehensive and step-wise understanding of the research process with a balanced blend of theory and applicative techniques; and also facilitate them to develop insights about basic concepts of research designs and methodology aimed at solving research problems

Module 1 Introduction

Meaning, Concept, nature steps types and characteristics of research, scientific inquiry Philosophical and Sociological foundations of research, Interdisciplinary approach and its implications in various research areas.

Module 2 Methods of Research

Qualitative and quantitative methods of research like Historical, case study, ethnography, ex-post facto, documentary and content analysis, survey (Normative, descriptive, evaluative etc.), field and laboratory experimental studies, Characteristics of methods and their implications in research area.

Module 3 Development of Research Proposal

Research proposal and its elements, Formulation of research problem-criteria of sources and definition, Development of objectives and characteristics of objectives, Development hypotheses and applications.

Module 4 Methods of Data Collection and Analysis

Concept of sampling and other concepts related to sampling. Probability and non-probability samples, their characteristics and implications. Tools of data collections, their types, attributes and uses. Redesigning, research tools-like questionnaire, opinion ire, observation, interviews, scales and tests etc. Analysis of qualitative data based on various tools. Analysis of quantitative data and its presentation with tables, graphs etc. Statistical tools and techniques of data analysis-measuresof central tendency, dispersion. Decision making with hypothesis testing through parametric and non-parametric tests. Validity and delimitations of research findings.

Module 5 Report Writing and Evaluation

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Principles of report writing and guide lines according to style manuals, Writing and presentation of preliminary, main body and reference section of report, Evaluation of research report.

Course Outcome:

Course can be an asset to the disaster management team by providing well-equipped and scientifically skilled research professionals and managers for conducting research in every aspect of disaster management.

Suggested readings:

- Methods of Social Survey and Research- Bajpai S. R. (1975) - Kitabghar, Kanpur
- Theory and Practice in Social Research - Hans Raj (1988) - Surjeet Publication, Kolhapur
- Methodology of Research in Social Science - Krishnaswami O. R. (1988) - Himalaya Pub. House
- Quantitative Technique - Kothari, C. R. (2005) - Vikas Publication House, New Delhi
- Development of Research tools - Gautam, N. C. (2004) - Shree Publishers- New Delhi
- Research Methodology and Statistical Techniques - Gupta Santosh (2005) - Deep and Deep Publications

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PAPER – 103

RISK ASSESSMENT & VULNERABILITY ANALYSIS

Objectives:

- To train students in doing Risk assessment and Vulnerability analysis
- To teach students vulnerability reduction strategies

Module 1 Introduction

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

Module 2 Risk Assessment & Reduction

Unit 1 : Risk Reduction-

Mainstreaming “Risk” , Role of science and technology in Disaster Risk Reduction, Strategies of Risk reduction, International Mobilization of Risk reduction

Unit 2 : 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 3 : 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 4 : Vulnerability analysis and Risk assessment:

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

Unit 5 : Hazard mapping using GIS, Use of remote sensing and GIS for risk assessment , multi hazard risk analysis using GIS

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Module 3 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

Module 4 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

Course outcome:

It will help in identifying vulnerable regions and calculating risk associated with the disaster. Minimizing loss due to disasters

Suggested Readings:

- Disaster Administration and Management, Text & Case studies- SL Goel- Deep and Deep Publications
- Disaster Management- G.K Ghosh-A.P.H. Publishing Corporation
- Disaster management – S.K.Singh, S.C. Kundu, Shobha Singh A – 119, William Publications, New Delhi.
- Disaster Management – Vinod K Sharma- NIDM, New Delhi
- Disaster Risk Reduction in South Asia- by Pradeep Sahni - Prentice – Hall of India
- Disaster Mitigation and Management Post – Tsunami Perspectives P, Jagadish Gandhi
- Disaster Mitigation – Experiences and reflections – By Pradeep sahani - Prentice – Hall of India

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PAPER – 104A
PHYSICAL GEOGRAPHY

Unit -I: Weathering and Landforms

Scope and objectives Geodynamic energy and landform evolution: Type of Weathering - physical, chemical and biological; internal heat energy and gravitational energy in the formation of landforms; Basic geomorphic concepts of landform evolution; Exogenic processes - weathering and geological controls in weathering- chemical weathering processes and products; weathering, erosion and landform alteration.

Unit -II: Fluvial and Glacial Systems

Fluvial system and processes - drainage basin, basin and stream characteristics, drainage types and patterns, Drainage morphometric, erosion, arid topography, transportation and deposition by running water, erosional landforms, depositional landforms; Glacial processes, types of glaciers and glacial landforms, permafrost.

Unit -III: Endogenic Landforms

Endogenic landforms: internal heat source, concept of plate tectonics and its role in the evolution of landforms, earthquakes and related landscape alterations, volcanic landforms, mountain building, rift valley formations; oceanic landforms.

Unit -IV: Oceanic weather pattern

Origin of ocean basins: Continental shelf, slope, rise and abyssal plains: bottom relief of Indian, Atlantic and Pacific Oceans; coral reefs; temperature and salinity of the Oceans; Density of Sea water; Waves, Tides and ocean currents: thermohaline circulation and the oceanic conveyor belt: sea-level changes; Ocean hazards: Sea-level changes - Pollution on marine environment including fisheries - climate change on marine bio-diversity - Coastal Zone Management.

Unit -V: Climate Resilience

Climatology: Origin, composition and structure of the atmosphere; insolation; Distribution of temperature, atmospheric pressure and motion general atmospheric circulation. Classification of world climates; Köppen's and Thornthwaite's Schemes; Heat Budget; Hydrological Cycle: Climate resilience: meaning and concept - indicator of climate resilience - causes and theories of climate resilience.

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PAPER – 104B
GEOINFORMATICS IN DISASTER MANAGEMENT

Unit -I: Basics of Remote Sensing

Remote Sensing: History, Development, Definition, Concept & Principles, Electromagnetic Radiation (EMR) and its Characteristics, Wavelength Regions and their Significance, Interaction of EMR with Atmosphere and Earth's Surface: Absorption, Reflectance and Scattering, Atmospheric Windows, Energy Balance Equation, Spectral Response and Spectral Signature, Spectral, Spatial, Temporal and Radiometric resolutions, Concept of Satellite, sensor, orbit, Satellite image and various interpretation techniques, digital image processing techniques.

Unit- II: Data Acquisition

Platform: Balloon, Rocket, Helicopter, Aircraft and Spacecraft, Aerial vs. Satellite Remote Sensing, Satellites and their Specifications: LANDSAT, SPOT, ENVISAT, RADARSAT, IRS, IKONOS, Sensors and their Specifications: MSS, TM, LISS (I,II,III,IV), PAN, WiFS, AWiFS, MODIS, Weather & Communication Satellites: Open data sources.

Unit- III: Basic Concepts of GIS

Definition, Philosophy & Historical evolution of GIS, Spatial vs. non-spatial data, Components of GIS, Spatial data models Raster and Vector: advantages & disadvantages, Raster Data & its Representation: Data Structure & File format, Data Compression (block code, chain code, run length code, quadtree, MrSID), Vector data representation: Data Structure & File format, Topology, Advantage of DBMS in Context of GIS: Data input and projections, geometric transformation of raster and vector data.

Unit -IV: Satellite Positioning System - An Overview

Introduction to Global Navigation Positioning System, Various Global Regional Satellite constellations, NAVSTAR GPS signals, Geo-positioning - Basic Concepts, Pseudo Range Measurement, Phase Difference Measurement, Sources of GNSS errors: Datum Ellipsoid definition and basic concepts, Global Datum vs. Indian Geodetic Datum, Coordinate Systems, Transformation of coordinates, GNSS Remote Sensing.

Unit- V: DRR using GIS and RS (Practical)

Hazard Evaluation and Zonation - Risk and Vulnerability Assessment, Damage assessment - Land use planning and regulation for sustainable development, Practices for Disaster Risk Management (Hydrological, Environmental and Health); Case Studies.

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SEMESTER SECOND

PAPER – 201

Pandemic Preparedness & Response

Unit I: Emerging and Re-Emerging diseases

Emerging diseases, Re-emerging diseases, Factors that favour emergence of new diseases, Zoonotic diseases, Overview of most common emerging and Re-Emerging diseases, Epidemic and Pandemic.

Unit II: Outbreak Investigation

Definition of Outbreak, criteria for establishing outbreak, steps of Outbreak infection, Prevention of outbreaks, Trigger alerts, Principles and methods of investigations Food, Water, Air, Vector borne outbreaks.

Unit III: Disease surveillance

Concept of surveillance, Types of surveillance, Surveillance design, IDSP, Surveillance, Surveillance Evaluation, Components of Surveillance system, EWARS, Indicator based surveillance, Event based surveillance system, Application Big data and Artificial intelligence as early warning systems.

Unit IV: Pandemic Disease

Influenza epidemiology, How diseases become Pandemics, Impact of Pandemic to global security and economics, WHO Pandemic Stages, International Health Regulations.

Unit V: Pandemic preparedness

Developing Early warning systems, Rapid Response teams, Capacity building, Training, Rumor Reporting, Public Health emergencies of International concern.

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SEMESTER SECOND

PAPER – 202

FINANCE RESILIENCE AND RISK TRANSFORMATION

Objectives:

To provide the understanding of life & non-life insurance, banking and other related issues pertaining to the finance sector.

Module 1 Introduction to Banking & Finance

Concept of Banking, Types of banks, Functions of banks; Tax administration; Public budgeting and finance systems; State and local finances.

Module 2 Central Bank / Reserve Bank

Role and function of central bank, RBI and Monetary Policy

Module 3 Introduction to Insurance

Evolution and Features of Insurance, Classification of Insurance, Conditions relating to risk, selection or Risk

Module 4 Life Insurance & General Insurance

Principles of LIC, Privatization of Life Insurance Business, Role and performance of LIC, Non-life insurance – Fire, Automobile, Marine, Health, Rural, Social and miscellaneous insurances.

Module 5 Insurance Policies for Disaster Management

Evaluation of risk funding and risk transfer policies; Catastrophe insurance pool; Reserve funds and contingent credit policies; Role of Government and market participants; Insurance policy design; Fiscal cost of relief and reconstruction; Grants and low interest loan for reconstruction.

Course Outcome:

Students will be able to understand the role of various financial agencies in providing financial support during disaster.

Suggested readings:

- Money, Banking & Public Finance – T.N.Hajela- Ane Books Pvt ltd-8th Edition.
- Banking and Financial Markets in India – BhasinNiti-New Century

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Publications-1947 to 2007.

- Banks & Institutional Management- Vasant Desai-Himalaya Publishing House-1st Edition.
- Banking theory and practices – K.C.Shekhar, LekshmyShekhar – Vikas Publishing House-19th Edition.
- Insurance principles & practice –M.N.Mishra, S.B.Mishra -S.Chand Publication- 17th Edition
- Life Insurance in India- H. Sadhak (Response Books) 1st Edition
- Insurance in India- P.S.Palande, R.S.Shah, M.L.Lunawat (Response Books) 6th Edition

National Disaster Response Plan, NCDM, New Delhi, 2001

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SEMESTER SECOND

PAPER – 203

REHABILITATION, RECONSTRUCTION AND RECOVERY

Objectives

- To understand post disaster issues in recovery and rehabilitation
- To undertake reconstruction as an opportunity to build disaster resilient structures and safe habitat

Module 1 Rehabilitation, Reconstruction and Development

Unit 1: Reconstruction Rehabilitation and Development- Concept, Meaning, types of Rehabilitation and Reconstruction, Importance of Disaster Mitigation, Cost – benefit analysis, relationship between vulnerability and development

Unit 2: 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 3: Role of Different organization in Rehabilitation

The Government and Disaster Recovery and rehabilitation; Disaster and Non governmental efforts ; Role of Local Institutions; Insurance, Police , Media

Module 2 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,

Unit 3: 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

Unit 4: Funding arrangements- Funding arrangements at state level and central level, Fiscal discipline, role of International agencies, mobilization of community for resource generation

Module 3 Rehabilitation

Unit 1: Socio- economic Rehabilitation- Temporary Livelihood Options and Socio-Economic Rehabilitation,

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Unit 2: Role of Housing / building authorities- 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

Module 4 Recovery

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

Course outcome:

This Course will help students in building safer environment through sustainable development. At the end of this course students are expected to carry out pre and post disaster damage assessment, understand disaster recovery and role of different agencies in the rehabilitation.

Suggested Readings:

- Asian Development Bank, Disaster Mitigation in Asia and the Pacific, Manila ADB, 1991.
- Disaster Administration and Management, Text & Case studies- SL Goel- Deep and Deep Publications
- Disaster Management- G.K Ghosh-A.P.H. Publishing Corporation
- Disaster management – S.K.Singh, S.C. Kundu, Shobha Singh A – 119, William Publications, New Delhi.
- Disaster Management – Vinod K Sharma- IIPA, New Delhi, 1995
- Encyclopedia of Disaster Management- Goel S.L. - Deep and Deep Publications, New Delhi, 2006.
- Post-Earthquake Rehabilitation and Reconstruction , F.Y. Cheng, Y.Y. Wang, Permagon Publications

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SEMESTER SECOND

PAPER – 204 A

Health Emergencies and Disaster Management

Unit I: Health systems and infrastructure

Introduction; Prioritizing health services; Supporting national and local health systems
Coordination; Primary Healthcare services; Clinical Services; Health Information System Human
resources; Financial management for humanitarian response; Monitoring and evaluating the
systems.

Unit II: Emergency health services

Introduction; Resilient Health Systems and Infrastructure; Planning Emergency Health services;
Mass casualty management; Emergency medical care; Mass event with long-term major
implications; Mass event of immediate, limited implication; Intermediate events causing
temporary displacement; Mass event long term displacement; Managing essential drug supplies;
Post-emergency phase.

Unit III: Emergency Mental Health and Psychosocial Support

Introduction; Stressors, protective factors, and mental health disorder in emergencies; General
measures and psychosocial support; Risk factors and intervention strategies; The minimum initial
services package (MISP); Maternal health and safe motherhood; Infant and young child feeding in
emergencies.

Unit IV: Control of Communicable Diseases

Introduction; Communicable diseases as public health threats; Principles of communicable
disease control; General approach for setting up disease control programmes; Major disease in
emergency and non-emergency settings; Diseases from the animal sector and other emerging
diseases; Monitoring, evaluation and research for disease control programmes.

Unit V: Water, Sanitation and Hygiene in Emergencies

Introduction; Diseases related to water, sanitation and hygiene; Community involvement in
disease prevention and mitigation; Improving environmental conditions; Excreta disposal; Water
quantity and Water quality; Hygiene and Food safety; Vector borne diseases control; Solid waste
management ; Drainage Lineation; Water and sanitation in cholera outbreak response;
guidelines for institutions.

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SEMESTER SECOND

PAPER – 204 B

OCCUPATIONAL HEALTH AND FIRE SAFETY MANAGEMENT

Unit-I: Occupational Hazard

Occupational Hazards - Physical Hazards, Chemical Hazards and Biological Hazards - Radiation Hazards - Psychological Hazards - Work Related Musculoskeletal Disorders - carpal tunnel syndrome - CTS- Tendon pain disorders of the neck- back injuries - Indian Occupational Safety Scenario.

Unit - II: Occupational Health and Toxicology

Concept and spectrum of health - functional units and activities of occupational health services, pre-employment and post-employment medical examinations - occupational related diseases, levels of prevention of diseases, notifiable occupational diseases - effects and prevention - cardio pulmonary resuscitation, audiometric tests, eye tests, vital function tests - Industrial toxicology, local, systemic and chronic effects, temporary and cumulative effects, carcinogens entry into human systems.

Unit - III: Accident Investigation and Reporting

Incident Recall Technique (IRT), disaster control, Job Safety Analysis (JSA), safety survey, safety inspection, safety sampling, Safety Audit. Concept of an accident, reportable and non-reportable accidents, unsafe act and condition - principles of accident prevention- Role of safety committee - Accident causation models - Cost of accident. Overall accident investigation process - Response to accidents, India reporting requirement, Planning document, Planning matrix, Investigators Kit, functions of investigator, four types of evidences, Records of accidents, accident reports.

Unit - IV: Fire Safety

Fire properties of solid, liquid and gases - fire spread - toxicity of products of combustion - theory of combustion and explosion- Sources of ignition - fire triangle - principles of fire extinguishing - active and passive fire protection systems - various classes of fires - A, B, C, D, E - types of fire extinguishers - Sprinkler-hydrants-stand pipes - special fire suppression systems.

Unit - V: Regulations for Health, Safety and Environment

Factories act and rules - Workmen compensation act. Indian explosive act - Gas cylinder rules - SMPV Act - Indian petroleum act and rules. Environmental pollution act Manufacture, Storage and Import of Hazardous Chemical rules 1989 Indian Electricity act and rules. Overview of OHSAS 18000 and ISO 14000.

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SEMESTER THIRD

PAPER – 301
ENVIRONMENT AND ECOLOGY

Unit- I: Introduction to Environmental studies

The global concern, Natural Resources and Energy resources- Renewable and Non Renewable; Water resources and Forest resources, Biodiversity and conservation, Threats to biodiversity.

Unit- II: Introduction to ecology

Branches of ecology, habitat and Ecological function and structure, Biogeochemical cycles.

Unit- III: Energy flow in ecosystem

Law of thermodynamics, flow of energy in an ecosystem-Food chains-food web; ecological pyramids; Ecological balance; Community dynamics-hydrosphere, xerosere Population dynamics- structural and functional aspects of population-death rate, mortality rate-parasitism, antagonism.

Unit- IV: Introduction to environmental pollution

Sources of pollution, Different types of pollution - Air, water, soil, marine, noise, thermal, water borne and water induced diseases. Pollution case studies-London smog disaster, Bhopal gas tragedy, Minamata tragedy, Ganga and Yamuna pollution, and cost of pollution management / Causes of environmental pollution.

Unit- V: Social issues and the environment

Sustainable development urban problems related to energy - Climate change- global warming, Acid rains, Ozone layer depletion, nuclear accidents, urbanization - causes of urban growth and environmental problems in urban areas.

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SEMESTER THIRD

PAPER – 302

FINANCE AND INSURANCE IN DISASTER MANAGEMENT

Objectives:

To provide the understanding of life & non-life insurance, banking and other related issues pertaining to the finance sector.

Module 1 Introduction to Banking & Finance

Concept of Banking, Types of banks, Functions of banks; Tax administration; Public budgeting and finance systems; State and local finances.

Module 2 Central Bank / Reserve Bank

Role and function of central bank, RBI and Monetary Policy

Module 3 Introduction to Insurance

Evolution and Features of Insurance, Classification of Insurance, Conditions relating to risk, selection or Risk

Module 4 Life Insurance & General Insurance

Principles of LIC, Privatization of Life Insurance Business, Role and performance of LIC, Non-life insurance – Fire, Automobile, Marine, Health, Rural, Social and miscellaneous insurances.

Module 5 Insurance Policies for Disaster Management

Evaluation of risk funding and risk transfer policies; Catastrophe insurance pool; Reserve funds and contingent credit policies; Role of Government and market participants; Insurance policy design; Fiscal cost of relief and reconstruction; Grants and low interest loan for reconstruction.

Course Outcome:

Students will be able to understand the role of various financial agencies in providing financial support during disaster.

Suggested readings:

- Money, Banking & Public Finance – T.N.Hajela- Anc Books Pvt ltd-8th Edition.

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- Banking and Financial Markets in India – BhasinNiti-New Century Publications-1947 to 2007.
- Banks & Institutional Management- Vasant Desai-Himalaya PublishingHouse-1st Edition.
- Banking theory and practices – K.C.Shekhar, LekshmyShekhar – Vikas Publishing House-19th Edition.
- Insurance principles & practice –M.N.Mishra, S.B.Mishra -S.Chand Publication- 17th Edition
- Life Insurance in India- H. Sadhak (Response Books) 1stEdition
- Insurance in India- P.S.Palande, R.S.Shah, M.L.Lunawat (Response Books) 6th Edition
- National Disaster Response Plan, NCDM, New Delhi, 2001

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PAPER – 303

LEGAL ASPECTS OF DISASTER MANAGEMENT

Objective:

Main objective is to make the students aware of the legal system related to disaster management

Unit I

- i. International Perspective of Disaster management and Related Legal Development
- ii. Role of Human Rights in Disaster Management
- iii. Long term Implications of Disasters with Regard to Law: Long term Consequences for the Victims. Revising the Models of Disaster Management
- iv. An Overview of Provisions of The Constitution of India (With more Emphasis on Fundamental, Rights, Directive Principles of State Policies and Fundamental Duties)
- v. Public Interest Litigation and Judicial Activism

Unit II

- vi. Role of the Union and the State Governments in Disaster Management; Functions of designated ministries (with Focus on Ministry of Home Affairs As The Nodal Agency)
- vii. Planning and Disaster Vulnerability: Role of Planning Commission in Disaster Management.
- viii. The Disaster Management Act, 2005
- ix. Importance of Decentralization in Disaster Management: Power and Function of Local Administration, Role of Municipalities And Panchayati Raj Institution With Reference to Following:
 - A Brief Case Study of National Capital Territory- North Delhi's Draft State Disaster Management Plan with Special Reference to Emergency Response plan
 - Gujrat Earthquake, Plague in Surat, Bhopal Gas Tragedy
 - Fire Safety norms: Uphar Cinema and Tamil Nadu School Fire Tragedies (With Emphasis On The Supreme Court Guide Lines And National Building Code 2005)
 - Seizure of Public Property during Disasters

Unit III

- x. Environment Jurisprudence: Case Laws

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- xi. National Environment Policy, 2006
- xii. Effectiveness and Evaluation of Central and State Pollution Control Boards in India (With Relevant Provisions of The Water (Prevention And Control Of Pollution) Act, 1974 And the Air (Prevention And Control Of Pollution) Act, 1981); The Environment (Protection) Act, 1986 and General Principles to regulate Hazardous Substances.

Unit IV

xiii. Important/ Useful Statutes with Provisions Relevant to Disaster Management

- The Atomic Energy Act, 1962
- The Explosive Act, 1872
- The Explosive Substance Act, 1908
- The Mines and Minerals (Regulation And Development) Act, 1957 Chapter IV of Factories Act, 1948
- The Weapons Of Mass Destruction And Their Delivery Systems (Prohibition of Unlawful Activities) Act, 2005
- The Essentials Services Maintenance Act, 1981

Readings:

- Kanoorayar, Vishnu and V.S. Jaya (ED). Disaster Management and Law.
- Pandey J.N. (2008). The Constitutional Law of India, Central Law Agency, Allahabad
- Jaswal P.S. (2009). Environmental Law, Allahabad Law Agency
- Baxi Upendra (1986). Inconvenient Forum and Convenient Catastrophe: The Bhopal Case,
- India Institute of Law.
- The Disaster Management Act 2005
- The Atomic Energy Act, 1962
- The Explosive Substance Act, 1908
- The Mines and Minerals (Regulation And Development) Act, 1957
- The Insecticide Act, 1968
- The Factories Act, 1948
- The Essentials Services Maintenance Act, 1981
- The Weapons of Mass Destruction and Their Delivery Systems (Prohibition of Unlawful Activities) Act, 2005.
- Bakshi, P.M., The Constitution of India (BARE ACT) Universal Law Publishing House.
- Agarwal, H.O. (2008). International Law and Human Right, Central Law Publication.
- Alexandra George (2001). Property in the human body and its parts: reflections self determination in liberal society, European University Institute, Florence.

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- Ambala-Bertrand, J.M. (1993). Political Economy of Large Natural Disasters, With Special Reference to Developing Countries, Clarendon Press, Oxford.
- Andrew Waite (1984). Environmental law: Hand book, London, Butterworths.
- Andrew Waite and Tim Jewell (Ed.) (1997). Environmental Law in Property Transactions, Butterworths, London.
- David Shaman (1996). India's Pollution Regulatory Structure and Background, In New Ideas in Pollution Regulation, World Bank Group.
- Diane, Warburton (Ed.) (1998). Community and Sustainable Development: Participation in the future, Earthscan Publications Ltd., London.
- Godschalk, D. R. et.al. (1999), Natural Hazard Mitigation Recasting Disaster Policy and Planning, Island Press, Washington, D.C.
- Norman Dorsen, (Ed.) (2001), Democracy and the Rule of Law, CQ Press, Washington, D.C.
- Walter Laqueur (2003). No End to War: Terrorism in the Twenty-First Century, Continuum, New York.

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SEMESTER THIRD

PAPER – 304 (A)
DISASTER MANAGEMENT MECHANISMS IN INDIA

Objectives:

Main objectives of this course are to familiarize the students with the foundations, recent trends and Governmental and Non Governmental practices for disaster management in India.

Unit I

- i. Institutional Framework of Disaster Management in India
- ii. Stakeholders in Disaster Management

Unit II

- iii. National/Central Level Management: Nodal Agencies
- iv. National Disaster Management Authority

Unit III

- v. State Authorities, local groups and committees: State, District and Local Level Management
- vi. Community Participation in Disaster Management and Risk Reduction

Unit IV

- vii. Role of the following in Disaster Management:
NGO, Private Organizations
Army and Police
Educational Institutions

Readings:

- Ahmad, A. (2010): Disaster Management: Through the New Millennium, Anmol Publications, New Delhi.
- Anandha Kumar, K.J., Walia, A. & Chaturvedi, S., (2012): India Disaster Report 2011, <http://nidm.gov.in/PDF/India%20Disaster%20Report%202011.pdf>
- Collins, L.R., (2002): Disaster Management and Preparedness, Library of Congress, United States of America.
- Management, A.P.H. Publishing Corporation, New Delhi

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- 9. Government of India, (2005): Disaster Management in India, <http://www.unisdr.org/2005/mdgs-drr/national-reports/India-report.pdf>
- 10. Gupta, H.K., (2003): Disaster Management, Universities Press (India) Private Limited, Hyderabad.
- Hewitt, K. (1997). Regions of Risk: A Geographical Introduction to Disasters, Longman, London.
- 3. Kapur, A. (2005). Disasters in India: Studies of Grim Reality, Rawat Publications, Jaipur; 2005.
- 4. Kasperson, J.X., Kasperson, R.E. and Turner, B. L. (1995). Regions at Risk: Comparisons of Threatened Environments, United Nation, University Press, Tokyo.
- 5. Ministry of Home Affairs, Government of India, (2011): Disaster Management in India,
- 6. NDMA (2009): National policy on Disaster Management,
- 7. Paraswamam, S. and Umikrishnan, P.V. (2000). India Disaster Report, Oxford University Press, New Delhi.
- 8. Shastri, K.N. (2012): Disaster Management in India, Pinnacle Technology.
- 9. Singh, R.B., (2000): Disaster Management, Rawat Publications, Jaipur.

MASTER OF ARTS IN DISASTER MANAGEMENT
DETAILED SYLLABUS

SEMESTER THIRD

PAPER – 304 (B)
DISASTER IN INDIA

Objectives

Main objectives of this course are to sensitize the students with disaster profile of India portraying regional dimensions.

Unit I

- i. Disaster Profiles of India
- ii. Regionalization of Disasters in India: Earthquake and Landslide
- iii. Regionalization of Disasters in India: Flood, Drought and Cyclone

Unit II

- iv. Earthquakes in Western Himalayas, North-east India and Gujarat
- v. Landslides in Himalayas and Western Ghats
- vi. Avalanches in Western Himalayas

Unit III

- vii. Floods in Ganga Basin and Floods in Punjab
- viii. Cyclones in Bay of Bengal and Arabian Sea
- ix. Disasters in Himachal Pradesh and Disasters in Uttrakhand

Unit IV

- x. Urban Disasters: Case Studies of Delhi and Mumbai Metropolitan Regions
- xi. Rail Accidents in India, Terrorism in India
- xii. Chemical and Industrial Disasters in India

PRACTICAL SESSIONS

Disaster Profile of India:

1. Earthquake Prone Areas and Seismic Zones in India
2. Flood Prone Area in India
3. Wind & Cyclone Zones in India
4. Landslide Hazard Zones in India
5. Drought Prone Areas in India
6. Multi Hazard Areas in India

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Readings:

- Ahmed, Shaik Iftikhar (2008). Disaster Management in the Wake of a Flood, Twenty First Century Publications, Patiala
- Bureau of Indian Standards (2002). Indian Standards: Criteria for Earthquake Resistant Design of Structures, Part I, Fifth Revision.
- Government of India (1997). Vulnerability Atlas of India (New Delhi: Building Materials and Technology Promotion Council, Ministry of Housing & Urban Poverty Alleviation).
- Kapur, A (2010). Vulnerable India: A Geographical Study of Disasters, Sage Publications, New Delhi.
- Kapur, A (2005). Disasters in India: Studies of Grim Reality, Rawat Publications, Jaipur.
- Paraswamam, S. and Umikrishnan, P.V. (2000), India Disaster Report, Oxford University Press, New Delhi.
- Bryant Edwards (2005): Natural Hazards, Cambridge University Press, U.K.
- Hewitt, K. (1997). Regions of Risk: A Geographical Introduction to Disasters, Longman, London.

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MASTER OF ARTS IN DISASTER MANAGEMENT
DETAILED SYLLABUS

SEMESTER FOURTH

PAPER – 401

NATURAL AND HUMAN INDUCED DISASTERS

Objectives

Main objectives of this course are to introduce the students with the nature of disasters with a view to acquainting them with their fundamentals.

UNIT- I

- i. Classification of Disasters; Conceptualizing the interface between environmental degradation and disasters
- ii. Natural Disasters I: Earthquakes & Tsunamis; Volcanic Eruptions; Landslides and Avalanches

UNIT- II

- iii. Natural Disasters II: Cyclones; Forest-fires; Droughts and Desertification; Floods

UNIT- III

- iv. Human Induced Disasters I: Nuclear Disasters; Chemical Disasters; Soil and Water Pollution

UNIT- IV

- v. Human Induced Disasters II: Global warming; Biological Disasters: Epidemics

Readings:

- Ahmed, Shaik Iftikhar (2008). Disaster Management in the Wake of a Flood, Twenty First Century Publications, Patiala.
- Bryant Edwards (2005). Natural Hazards, Cambridge University Press, U.K.
- Carter, W. Nick (1991). Disaster Management, Asian Development Bank, Manila.
- Central Water Commission (1987). Flood Atlas of India, CWC, New Delhi.
- Central Water Commission (1989). Manual of Flood Forecasting, New Delhi.
- Government of India (1997). Vulnerability Atlas of India, New Delhi.
- Kapur, A. (2010). Vulnerable India: A Geographical Study of Disasters, Sage Publications, New Delhi.
- Kapur, A. (2005). Disasters in India: Studies of Grim Reality, Rawat Publications, Jaipur.

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- Sahni, Pardeep et al. (eds.) (2002). Disaster Mitigation Experiences and Reflections, Prentice Hall of India, New Delhi.

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MASTER OF ARTS IN DISASTER MANAGEMENT
DETAILED SYLLABUS

SEMESTER FOURTH

PAPER – 402
ROLE OF INTERNATIONAL AGENCIES IN DISASTER MANAGEMENT

Objective:

To familiarize the students with the role played by the international agencies in management of disasters.

UNIT I

i. International Agencies in Disaster Management: An Overview United Nations High-Commissioner for Refugees (UNHCR); United Nations Population Fund (UNFPA); United Nations Secretary-General's Advisory Board on Water & Sanitation (UNSGAB); Office for the Coordination of Humanitarian Affairs (United Nations) (OCHA); International Committee of the Red Cross; World Health Organization (WHO)

UNIT II

ii. Detailed studies of the role played by the following agencies in disaster management:

- United Nations
- World Health Organisation (WHO) and
- OXFAM

UNIT III

iii. Planning and implementation of development assistance programmes for Refugees:

- Main Concepts and Issues;
- Planning, Implementation, Monitoring and Evaluation of such Programmes;
- Planning and Participatory Development

UNIT IV

iv. Environmental health in emergencies during natural and human induced disasters: Prevention, Detection, Response, Preparedness, Recovery

Readings:

- Ghosh, GK (2006): Disaster Management, Vol. I-VI, APH Publishing Corporation, New Delhi.

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- Trivedi, PR (2007): Encyclopedia of Disaster Management, Vol. 1-12, Jnanada Prakashan, New Delhi.
- The World Health Report, World Health Organisation, Geneva, various reports published 1995 onward.

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MASTER OF ARTS IN DISASTER MANAGEMENT
DETAILED SYLLABUS

SEMESTER FOURTH

PAPER – 403
Public Health in Disasters

Objective:

Health Care Facility and emergency management is an essential curriculum for the disaster management studies. The course will cover issues relating to public health, health policy and health management etc.

UNIT-1

Public Health and its role in Disaster Management: Public health systems, Health promotion and disaster prevention, Integrated approach.

UNIT-2

Areas of Public Health: Community and Family Health, Global Health, Environmental and Occupational Health, Epidemics.

UNIT-3

Health Policy and Management: Public Health Practices, Public Health Emergencies in large populations.

UNIT-4

Health Management and Leadership: Study Peer Reviewed Competency for effective emergency response by health care personnel, Preparation and knowledge skills in new health threats like bio-defense and bio-terrorism, Training in leadership, learning to manage finances, insurance claims etc.

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SEMESTER FOURTH

PAPER – 403 (A)

COMMUNITY BASED DISASTER RISK MANAGEMENT

UNIT I – Community Based Management

Community and social solidarity; Role of local community in Disaster Management, Disaster resilient community, habitualization and culturalization of Disaster Management practices, Community based disaster management practices – case studies. Gender perspective to disasters, Utilization of public property during disasters, Community response to disasters.

UNIT II - Need Based Assessment

Trends in Resource Mobilization for Disaster Management - Community Risk Assessment - Assessment of Disaster Risk Communication Needs - Damage, Loss and Needs Assessment - Community Risk Assessment Tool - Community Disaster Reduction Planning.

UNIT III – Implementation, Monitoring and Evaluation

Community Organizing - Community Training - Community Disaster Information Center - Disaster Risk Communication by Local Authorities - Early Warning by Local Authorities - Community Disaster Reduction Fund - Role of Local Authorities in Community-based Hazard Mitigation - Mitigation of Hydro- meteorological Hazards - Mitigation of Geological Hazards - Monitoring and Evaluation.

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MASTER OF ARTS IN DISASTER MANAGEMENT
DETAILED SYLLABUS

SEMESTER FOURTH

PAPER – 403 (B)

Psycho-social Ramifications and Resource Mobilization

Objective:

The objective of the course is to develop a model for psychological, economic and social support in situations of mass emergency. On site preparation requires academic inputs. The paper looks into preventive, collective and long-term needs.

UNIT-1

Identifying Socio-Psychological Needs in Mass Emergency: Global assessment of Needs and Priorities. Area specific requirements, Psychological Characteristics of Disaster Management. Different psychological considerations in natural and man made disasters.

UNIT-2

Training in Humanitarian Professionalism: Professionalism and Humanitarian Responses, Short term support, Long term support, Conducting workshops and case analysis.

UNIT-3

Community and Individual Empowerment: Study of social domains, movements of actors negotiating the conditions and effects of vulnerability and disaster, Max Weber's notion of calculability in handling crisis, Community building in developing local resilience to disasters: developing seed leaders, communication networks and personal commitments.

UNIT-4

Operative and Strategic Management: Economic Impact of Disasters, Role of NGOs, Role of Education, Role of Agencies: National and International, The methods and tools for analyzing

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potential investment decisions in hazard prone areas and alternative development strategies

References:

1. OHO Lerbinger, (1986), The Crisis Manager, Facing risk and responsibility, Lawrence Erlbaum associates.
2. Horowitz, M (1986), Stress response syndranes, Northvale, N.J. Armson.
3. Peter, K. Hodgkinson, (1998), Coping with Catastrophe, A handbook of post disaster psychological after care. Routledge.
4. Kazimiera Adamowski (1998), Creating Excellence in Crisis Care, Johnwiley & Sons Inc.