VIDYASAGARUNIVERSITY

Midnapore, West Bengal

PROPOSED CURRICULUM&SYLLABUS (DRAFT) OF

BACHELOR OF SCIENCE WITH DISASTER MANAGEMENT

(MULTIDISCIPLINARY STUDIES)

3-YEAR UNDERGRADUATE PROGRAMME

(w.e.f. Academic Year 2023-2024)

Based on

Curriculum & Credit Framework for Undergraduate Programmes

(CCFUP), 2023& NEP, 2020

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VIDYASAGAR UNIVERSITY

BACHELOR OF SCIENCE IN PHYSICAL SCIENCE with DISASTER MANAGEMENT

(*under CCFUP, 2023*)

Level	YR.	SEM	Course Type	Course Code	Course Title	Credit	L-T-P	Marks		
								CA	ESE	TOTAL
B.Sc. in Physical Science with Disaster Management	1st	I	**SEMESTER-I**							
			Major-1 (Disc.-A1)	DSMPMJ101	**T: Introduction to Disaster Management** *(To be studied by the students taken Disaster Management as Discipline-A)*	4	3-1-0	15	60	75
			SEC	DSMSEC01	**P: Media, Reporting and Documentation in Disasters**	3	0-0-3	10	40	50
			AEC	AEC01	Communicative English-1 (***common for all programmes***)	2	2-0-0	10	40	50
			MDC	MDC01	Multidisciplinary Course-1 (***to be chosen from the list***)	3	3-0-0	10	40	50
			VAC	VAC01	VAC-01: ENVS (***common for all programmes***)	4	2-0-2	50	50	100
			Minor-1 (Disc.-C1)	DSMMI01	**T: Introduction to Disaster Management** *(To be studied by the students taken Disaster Management as Discipline-C)*	4	3-1-0	15	60	75
			Semester-I Total			20				400
		II	**SEMESTER-II**							
			Major-2 (Disc.- B1)		***To be decided (Same as like A1 for students taken Disaster Management as Discipline-B)***	4	3-1-0	15	60	75
			SEC	DSMSEC02	**P: Disasters and Human Behaviour**	3	0-0-3	10	40	50
			AEC	AEC02	MIL-1 (***common for all programmes***)	2	2-0-0	10	40	50
			MDC	MDC02	Multi Disciplinary Course-02 (***to be chosen from the list***)	3	3-0-0	10	40	50
			VAC	VAC02	VAC-02 (***to be chosen from the list***)	4	4-0-0	10	40	50
			Minor-2 (Disc.-C2)	DSMMI02	**T: Disaster Management Planning, Risk assessment and vulnerability analysis** *(To be studied by the students taken Disaster Management as Discipline-C)*	4	3-1-0	15	60	75
			Summer Intern.	CS	Community Service	4	0-0-4	-	-	50
			Semester-II Total			24				400
			TOTAL of YEAR-1			44	-	-	-	800

PMJ= Major Programme (Multidisciplinary), MI = Minor, A/B = Choice of Major Discipline; C= Choice of Minor Discipline; SEC = Skill Enhancement Course, AEC = Ability Enhancement Course, MDC = Multidisciplinary Course, VAC = Value Added Course; CA= Continuous Assessment, ESE= End Semester Examination, T = Theory, P= Practical, L-T-P = Lecture-Tutorial-Practical, MIL = Modern Indian Language, ENVS = Environmental Studies

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MAJOR (MJ)

Major A1/B1: Introduction to Disaster Management **Credits 04**

Major A1/B1T: Introduction to Disaster Management **Full Marks: 75**

Course contents:

Unit-I Introduction to Disaster: Disaster: Concepts and definitions (Disaster, Hazards, Vulnerability, Resilience, Risks). Factors & significance, causes, nature, types and magnitude of disasters. History of Disaster. Parameters of Disaster Risks. Levels of disasters as per national guideline.
Disaster trends (Global, national, regional). Slow onset and rapid onset disasters, also predictable and unpredictable disasters. Difference between accidents and Disasters. Simple and Complex disasters, Brief explanation of some frequently occurring natural disasters in India.
Impacts of disasters (including social, economic, political, environmental, health, psychosocial, etc.). Differential impacts – in terms of caste, class, gender, age, location, disability, Global trends in disasters : urban disasters, pandemics, complex emergencies, Climate change. Classification of hazards. Response time, frequencies, forewarning, exposure time of different hazards. General characteristics and problem areas of different natural and manmade hazards. Common approaches to study natural and manmade hazards; vulnerability and disasters.
Equity issues in disasters. Aims of disaster management. Principles and component of disaster management. Dimension of natural and anthropogenic disaster.

Unit-II : **Consequences of disaster**: causes and consequences of hazards-physical, economic, cultural. Repercussion of disasters and hazards, Economic damage. Loss of human and animal life. Destruction of Ecosystem.

Unit-III : **Global perspectives:**
• **Natural disaster** - Study of environmental impacts induced by human activity. Causes, impact, consequences, trends understanding of: Earthquake, volcanisms, cyclones, tsunami, floods, draughts and famines, landslides and avalanches, heat and cold waves.
• **Man-made disasters**: Biological disasters, chemical disasters, nuclear disasters, building fire, cold fire, forest fire, oil fire, air pollution, water pollution, deforestations, industrial pollution, road accidents, rail accidents, air accidents, sea accidents, oil slicks and spills, out- break of disease and epidemic, building collapse, rural and urban fire, war and conflicts, over exploitation of natural resources.
Unit – IV: Inter-relationship between Disasters and Development: factors affecting vulnerabilities, differential impacts, impact of development projects such as dams, embankments, changes in land use, etc. Climate change adaptation. Relevance of indigenous knowledge, appropriate technology and local resources. Different stakeholders in disaster relief. Refugee operation during disasters. Pre-disaster and post disaster human resettlement and rehabilitations issues during and after disasters. Inter sectorial coordination during disasters. Model of Disasters.

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MINOR (MI)

MI-1/ C1: Same as MJ A1/B1 **Credits 04**

MI-1/ C1T: Same as MJ A1/B1 **Full Marks: 75**

***PLEASE SEE- MJ A1/B1:* Introduction to Disaster Management**

MI-2/C-2: Disaster Management Planning, Risk assessment and vulnerability analysis
Credits 04
Full Marks: 75

MI-2/C-2T: Disaster Management Planning, Risk assessment and vulnerability analysis

Course contents:

A. Disaster management and planning

Management and disaster

Nature, scope and management process. Policy of disaster management, Types of planning. Identifying crisis situation. Role, skills and competencies. Control process in disaster management. Team building in disaster management. Components of disaster relief: water, food, sanitation, shelter, health, waste management.

Disaster management concepts, elements and disaster management cycle:

Disaster management cycle – paradigm shift in disaster management. Different phase of Disaster Management Cycle (DM Cycle). Relief mechanism (needs assessments, relief administration and distribution, management of relief centers, external supports, etc.). Compensation and insurance.

Pre disaster management, post disaster management, integrated development planning for disaster management, long term disaster counter planning.

Pre - disaster management – risk assessment and analysis, risk mapping, zonation and microzonation. Prevention and mitigation of disasters. Planning & Designing structural and non structural measures, Early warning system: preparedness, capacity development, awareness.

During disaster – Evacuation, disaster communication, search and rescue, Emergency operation centre, Incident command system, Relief and rehabilitation.

Post disaster management - search, rescue, evacuation and other logistic management. Relief. Damage and needs assessments, restoration of critical infrastructure. Early recovery, reconstruction and re-development.

National and International policies for disaster managements. IDNDR, Yokohama strategy, Hyogo framework, of action.

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Disaster management planning: Planning strategies (State and District DM planning); planning needs. Management of essential supplies and temporary shelter. Site management. Medical trauma and stress management. Early warning and prediction system: Role of IT, RS, GIS, GPS and ICS. District wise contingency planning, participatory disaster management.

Emerging approaches to Disaster Management:

(a) Pre - disasters stage preparedness – hazards zonation maps – predictability and forecasting warning, land use zoning, information, Education & Communication (IEC) Disaster resistance house construction, planning and construction of flood shelters, and cyclone shelters, population reduction in vulnerable area and awareness. (b) Emergency stage – Rescue training for search and operation at national and regional level, ground management plan preparation, immediate relief, assessments surveys. (c) Post disaster stage rehabilitations - political administrative aspects, social aspects, economic aspects, cultural aspects and environmental aspects.

Disaster management in India

Disaster profile in India – Hazard and vulnerability profile of India. Disaster management- India's scenario. Mega disaster in India and lesson learnt. Regional perspectives of hazards in India with reference to dimension, causes, consequences and remedial measures: (a) Hills/Coasts, (b) Terrorisms. Disaster prone areas in India: Study of seismic zone, area of prone to floods and draughts, landslides and avalanches, Area prone to cyclonic and coastal hazards with special references to Tsunami: post disaster disease and epidemics.

Institutional arrangements (Mitigation, Response and Preparedness, DM acts and policies, other related policies, plans, program and legislations). Disaster management acts 2005- Institutional and Financial mechanism. Disaster management policy (2009).

Organizational framework for disaster management in india. Role of national and international organization for Disaster management. National guidelines and plans for disaster management. Role of Government (Local, State and International), non Government and inter Governmental agencies. National Institute of Disaster Management, National Disaster Response Force (NDRF), National Disaster Management Authority, State Disaster Management Authority, District Management Authority.

Disaster preparedness and management: Preparedness: monitoring of phenomena triggering a disaster or hazards. Evaluation of risk. Application of remote sensing, data from metrological and other agencies.

Disaster case studies in India: Bhopal Gas Disasters, Earthquake in Gujrat, Super Cyclone in Orissa, South India Tsunami, Plague in Surat, Landslides in North East, Bengal famine.

Development projects in India (dams, SEZ) and their impacts, Logistic management in specific emergency situation. Brief idea on: Rajib Gandhi Rehabilitation Package, Integrated Coastal Downloaded from Vidyasagar University by 14.139.211.194 on 09 October 2020 : 09:18:13; Copyright : Vidyasagar University

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Zone Management, National Flood Risk Mitigation Projects (NFRMP), mines Safety in India, Indian Materiological Departments, national Crisis Management Committee, Indian National Centre for Oceanic Information System (INCOIS).

B. Risk assessment and vulnerability analysis

Disaster Risks: Understanding risk - Concepts and elements. Global and national risk situation. Disaster risk reduction. Community based disaster risk reduction. Structural – non structural measures,

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Role and responsibility of the community, Panchayeti Raj Institution/Urban local bodies (PRIs/ULBs), States, Centers and other stakeholders. Strengthening capacity for reducing risks.

Disaster risk assessment (Hazard- vulnerability-capacity analysis): Participatory risk assessments. Vulnerability analysis and risk assessment. Technique of risk assessments. Global cooperation in risk assessments and warning. People's participation in Risk assessments. Strategies for survival.

Vulnerability analysis: Vulnerability concepts and parameters. Risks and vulnerability relationships. Observation and perception of vulnerability. Vulnerability identification. Socio economic factors in vulnerability. Vulnerability analysis. Socio economic vulnerability, Human Development Index (HDI) development.

Techniques of risks and vulnerability analysis: Risks assessments and vulnerability analysis techniques. Remote sensing and GIS basic concepts and elements.

Vulnerability and Development: The role of development. Resource analysis and mobilization. Strategic development for vulnerability reduction.

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SKILL ENHANCEMENT COURSE (SEC)

SEC 1: Media, Reporting and Documentation in Disasters **Credits 03**

SEC1P: Media, Reporting and Documentation in Disasters **Full Marks: 50**

Course Outline:

Suggested Reading:

Unit-I: Media

1. Types of Media.
2. Importance of role of media – informative, suggestive and analytical.
3. Role of Media in Disaster Mitigation. Impact of media on policy.
4. News media in disaster management: Types of news media, structure and trends. News media during crisis.

Unit-II: Reporting

1. Factual and Ethical Reporting.
2. Impact of Media Coverage and Public Communication and Handling of Media.
3. Media reports: Governmental and community preparedness.

Unit-III: Documentation

1. Principles of Report Writing and Guidelines according to style manuals
2. Writing and Presentation of Preliminary, Main body and Reference section of Report, Evaluation of Research Report

SEC 2: Disasters and Human Behaviour **Credits 03**

SEC 2P: Disasters and Human Behaviour **Full Marks: 50**

Course Outline:

Unit-1: Individual Dimensions of Organizational Behaviour

Nature of Human Behaviour- Concept, Process, Managerial Implications, Individual differences, Perception- Meaning, Perceptual Process, Perceptual Organization, Interpersonal Perception. Attitudes and Values - Formation, Theories of attitude formation, attitude change, Values. Motivation- Motivation and behaviour, Motivation and performance, Theories of motivation.

Unit- 2: Group Dimensions of Organizational Behaviour

A. Group Dynamics- Formal and Informal Groups, Group Behaviour, Group Decision Making Team dynamics- Types of Teams, Effective Team, Team Creation, Task force, Quality Circle Leadership - Concept, Leadership Styles, Leadership development, leadership & technology.
B. Conflict-Levels of Conflict, Process, Conflict Management, Negotiation, Grievance management. Stress- Concept, Sources of stress, Stress Management, Stress and Performance Change- Levels of change, Types of change, Change process, Change management.

Unit -3: Training and Development

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Meaning, Objectives, Training process, Training needs analysis, Training Techniques and Methods, E valuation, Training Budget, Training outsourcing, E-training, Emerging Trends in Training, Counseling.

Unit- 4: Cases of managing human behaviour in disaster management

1. Indian cases in natural disasters and man-made disasters.
2. Global cases in natural disasters and man-made disasters.

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