VIDYASAGAR UNIVERSITY

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 Manage-ment	2nd	III	**SEMESTER-III**							
			Major-A2	DSMPMJ02	**T: Disaster Management Planning** ***(To be studied by students taken Disaster Mgt. as Discipline- A)***	4	3-1-0	15	60	75
			Major-A3	DSMPMJ03	**T: Status of Disaster Management in India** ***(To be studied by students taken Disaster Mgt. as Discipline- A)***	4	3-1-0	15	60	75
			SEC	SEC03	**P: First-Aid for Disasters** ***To be taken by the students of Discipline C.***	3	0-0-3	10	40	50
			AEC	AEC03	Communicative English-2 (***common for all programmes***)	2	2-0-0	10	40	50
			MDC	MDC03	Multidisciplinary Course-3 (***to be chosen from the list***)	3	3-0-0	10	40	50
			Minor-3 (Disc.-C3)	DSMMIN03	**T: Status of Disaster Management in India** ***(To be studied by students taken Disaster Mgt. as Discipline- C)***	4	3-1-0	15	60	75
			Semester-III Total			20				375
		IV	**SEMESTER-IV**							
			Major-B2		***(Same as MajorA2 for Disaster Mgt. taken as Discipline-B)***	4	3-0-1	15	60	75
			Major-B3		***(Same as Major–A3 for Disaster Mgt. taken as Discipline-B)***	4	3-0-1	15	60	75
			Major (Elective) -1	DSMMJE-01	**T: Science and Technology for Disaster Management** ***(To be studied by students taken Disaster Mgt. as Discipline- A)***	4	3-1-0	15	60	75
			AEC	AEC04	MIL-2 (***common for all programmes***)	2	2-0-0	10	40	50
			Minor -4 (Disc.-C4)	DSMMIN04	**T: Science and Technology for Disaster Management** ***(To be studied by students taken Disaster Mgt. as Discipline- C)***	4	3-0-1	15	60	75
			Summer Intern.	IA	Internship / Apprenticeship- **activities to be decided by the Colleges following the guidelines to be given later**	4	0-0-4	-	-	50
			Semester-IV Total			22				400
			TOTAL of YEAR-2			42	-	-	-	775

MJP = 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, CA= Continuous Assessment, ESE= End Semester Examination, T = Theory, P= Practical, L-T-P = Lecture-Tutorial-Practical, MIL = Modern Indian Language

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MAJOR (MJ)

Major A2/B2: Disaster Management Planning **Credits 04 FM: 75**

Major A2/B2T: Disaster Management Planning **Credits 04**

Course contents:

Unit-I: Disaster Management Components and Cycle: 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 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.

Unit-II: Risk and vulnerability Assessment: 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 nonstructural 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.

Unit-III: Disaster Management Policies: National and International policies for disaster managements. IDNDR, Yokohama strategy, Hyogo framework, of action.

Unit-IV: Preparedness in Disaster Management: 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.

Unit-V: Crisis Management in Disaster: (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.

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Major A3/B3: Status of Disaster Management in India **Credits 04 FM: 75**

Major A3/B3T: Status of Disaster Management in India **Credits 04**

Course contents:

Unit-I: Disaster Profile: 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.

Unit-II: Institutional Arrangements: 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).

Unit-III: Organizational framework: 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.

Unit-IV: 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.

Unit-V: Disaster Events and Development Projects in India:

1. 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.
2. Development projects in India (dams, SEZ) and their impacts, Logistic management in specific emergency situation. Brief idea on: Rajib Gandhi Rehabilitation Package, Integrated Coastal
3. 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).

Major Elective (MJE)-01: Science and Technology for Disaster Management **Credits 04 (FM-75)**

MJE-01T: Science and Technology for Disaster Management (Theory) **Credits 04**

Course Content:

Unit-I: Basic of Remote Sensing: Concept and Scope of RS; Concept of electromagnetic radiation, energy interaction in the atmosphere energy interaction with earth surface feature.

Unit-II: Basics of GIS: Basic concept, GIS data, Information organization and data structure, Nature and source of data in GIS;

Unit-III: Basics of IRNS: Introduction to Conventional field survey technique; Global Organization Satellite System; GPS surveying methods and accuracy.

Unit-IV: Application of RS & GIS in Anthropologic Disaster Management: Application in anthropologic disaster, structure for storing data, Disaster safe design and construction of RS & GIS in anthropologic forest management.

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MINOR (MI)

MI-3/ C3: Status of Disaster Management in India **Credits 04 Full Marks: 75**

MI-3/ C3T: Status of Disaster Management in India **Credits 04**

Course contents:

Unit-I: Disaster Profile: 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.

Unit-II: Institutional Arrangements: 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).

Unit-III: Organizational framework: 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.

Unit-IV: 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.

Unit-V: Disaster Events and Development Projects in India:

1. 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.
2. Development projects in India (dams, SEZ) and their impacts, Logistic management in specific emergency situation. Brief idea on: Rajib Gandhi Rehabilitation Package, Integrated Coastal
3. 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).

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MI-4/C-4: Science and Technology for Disaster Management **Credits 04 Full Marks: 75**

MI-4/C-4T: Science and Technology for Disaster Management

Course contents:

Unit-I: Basic of Remote Sensing: Concept and Scope of RS; Concept of electromagnetic radiation, energy interaction in the atmosphere energy interaction with earth surface feature.

Unit-II: Basics of GIS: Basic concept, GIS data, Information organization and data structure, Nature and source of data in GIS;

Unit-III: Basics of IRNS: Introduction to Conventional field survey technique; Global Organization Satellite System; GPS surveying methods and accuracy.

Unit-IV: Application of RS & GIS in Anthropologic Disaster Management: Application in anthropologic disaster, structure for storing data, Disaster safe design and construction of RS & GIS in anthropologic forest management.

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SKILL ENHANCEMENT COURSE (SEC)

(To be studied by students taken Disaster Management as Discipline- C)

SEC 3: First-Aid for Disasters **Credits 03**

SEC3P: First-Aid for Disasters (Practical) **Full Marks: 50**

Course Outline:

Unit -1: First-Aid Assessment and Supplies

Recognizing Emergencies. Assessing the situation. Disaster Kit. Home First Aid Kit, Travel First Aid Kit. Organizing Shelter. Check-lists. Safety Tools. DRAB and ABCD of first-aid.

Unit- 2: Disaster specific safety guidelines

Landslides, Earthquakes, Fires, Floods, Hazardous Materials. Epidemics. Others. Life-stock safety and Management during disasters.

Unit -3: Emergencies and What to do

The ABC Bites and Stings. Breathing. Bleeding. Fractures. Burns. Choking. Cold and Heat related illnesses. Convulsions and Seizures. Cardiac Problems. Dizziness and Fainting. Eye and Ear injuries. Head, neck and spine injuries. Infectious diseases. Poison. Shock. Stroke and Tooth injuries. Drowning, Dizziness and Fainting.

Unit - 4: Tools and Techniques for First Aid

Concept of Basic Life Support. Bandaging, Slings and Binders. Checking Pulse. Cardiopulmonary resuscitation (CPR). Clearing Air-way obstruction. Using the Fire extinguisher.

List of Practical:

1. Breathing and circulation, Life-saving practices
2. Removing clothing, Casualty handling,
3. Preparation of First aid Toolbox,
4. Dressings, Cold compresses,
5. Principles of bandaging,
6. Roller bandages, Tubular gauze bandages, square knots, hand and foot cover
7. Arm sling, Elevation sling, improvised slings

Suggested Reading:

- The authorized manual of St. John Ambulance, St. Andrew's Ambulance association and the British red cross society, First Aid manual, 9th edition, Dorling Kindersley, London
- Clement Text book on First Aid & Emergency Nursing, First edition, JP brothers, 2012
- American Red Cross. (2008). A Family Guide to First Aid and Emergency Preparedness. United States: Staywell.
- Staywell. (2012). Responding to Emergencies: Comprehensive First Aid/ CPR/ AED. United States: American National Red Cross.

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