



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Science
Department of Chemistry
Generic Elective Course
Choice Based Credit System (CBCS)

sem III PG

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
GPCH103	PG	Chemical Disasters and Management	3	0	0	3	60	20	20	00	00

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P - Practical; C - Credit;

*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

1. This course will provide the knowledge of different types of disasters and its management
2. Compare anthropogenic hazards, disasters, associated activities and the effects of chemical, nuclear wars and case studies
3. Apply knowledge about existing global frameworks and existing agreements and the role of community in successful Disaster risk reduction
4. Student will learn about the government guidelines, relief funds, legal and environmental considerations under disaster management acts

Course Outcomes:

After completion of this course the students are expected to be able to demonstrate following knowledge, skills and attitudes. The student will demonstrate capability of following

CO1. To compare hazards, disasters and associated natural phenomena their interrelationships, causes, their effects - developing humanitarian assistance before and after disaster

CO2. Learn and apply the practical knowledge of disaster management by studying case studies


CO3. Will learn the details of Disaster management act and disaster relief force, importance of Government, NGO agencies, environment relief funds

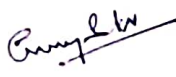
CO4. Will gain the knowledge by doing safety experiments on handling of hazardous materials, corrosive chemicals and simulation experiments

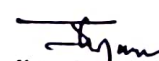
Syllabus:


UNIT I: Introduction to Disasters – concepts and definitions

Understanding the Concepts and Definitions of Disaster, Hazards, Vulnerability, Risk. Classification of Disasters, Nature of Chemical Disasters, Causes and Effects of Major Chemical


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Accidents, Process and Safety System Failures, Technical Errors, Human Errors, Natural Calamities, Terrorist Attacks, Waste Processing.

UNIT II: Types of Chemical disasters and case studies

Types of Chemical Disasters Nuclear, Radiological and Biological Disasters, Environment Pollution Based Disaster (Air, Water, Soil and Solid Waste Disaster) Chemical and Nuclear Wars, Medical and Drug Related Disaster, Food Poisoning and Pesticides. Case Studies: Cancer Belt Study, Bhopal Gas Tragedy, Minamata, Mid-Day Meal Food Poisoning, Eye Camp Operation Failure, Solid Waste Pollution.

UNIT III: Disaster management and Analysis

Risk Assessment and Analysis, Prevention and Mitigation of Disasters, Early Warning System, Preparedness, Capacity Development; Awareness During Disaster – Evacuation – Search and Rescue – Emergency Operation Centre – Relief and Rehabilitation – Post-Disaster – Reconstruction and Redevelopment. On-Site Plans: Standard Operating Procedures, Control Rooms, Safety Officers, Committees for Disaster Management, Rescue Teams, Trainings, Exercises and Drills. Off-Site Plans: Dissemination of Information, Identification of Vulnerable Locations, Damage Assessment and Compensation.

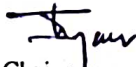
UNIT IV: Guidelines, Plans and Relief funds

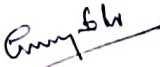
Disaster management act 2005, Creation of national disaster relief force, National guidelines and Plans on disaster management, Role of government (Local, State and National), Non-Government and Inter Governmental Agencies. Environment relief funds, Role of Insurance in Chemical Disaster Management.

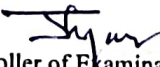
UNIT V: Legal and Environment Considerations:

Safety with Hand and Portable Power Tools, Pressure Vessel Hazards, Safety in Material Handling, Safety with Storage Materials, Transportation of Hazardous Materials, Evaluation of

Risk Funding, Catastrophe Insurance Pool, Reserve Funds and Contingent Credit Policies, Legal and Institutional Aspects, Target Groups, Environment Liabilities and Litigations.


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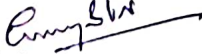


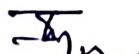
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Reference Books:

1. S. Payment, Nuclear, Biological and Chemical Disasters, the Rosen Publishing Group, Inc., New York, 2006.
2. S. L. Goel, Encyclopedia of Disaster Management, Deep and Deep Publications, New Delhi, 2009.
3. S. Modh, Introduction to Disaster Management, Macmillan Publishers India Ltd, New Delhi, 2010.
4. P. K. Ray, Disaster preparedness against Accidents, New Age India International, New Delhi, 2006.
5. B. K. Khanna, All you wanted to know about Disasters. New India Publishing Agency, New Delhi, 2005.


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