



University of Kerala

Discipline	BOTANY				
Course Code	UK4VACBOT204				
Course Title	DISASTER MANAGEMENT				
Type of Course	VAC				
Semester	IV				
Academic Level	300 - 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	03	03 Hours	-	-	03 Hours
Pre-requisites	No Pre-requisites				
Course Summary	Understanding of the Earth's climate system, including the natural greenhouse effect and dark heating. Students learn about international organizations and agreements addressing climate change. The concepts of hazards, vulnerability, and disasters, along with risk evaluation and climate change risks outlined in IPCC reports. Classification of disasters and management strategies and measures				

Detailed Syllabus:

Module	Unit	Content	Hrs
I	Climate change		07
	1	Climate system- The Earth's natural greenhouse Effect and Dark Heating, radiation balance, Climates of the past. Natural versus anthropogenic causes of climate change, enhanced greenhouse effect, climate forcing, climate forcing agents- greenhouse gases, aerosols, clouds, land use, etc; global warming: role of CO ₂ , CH ₄ , water vapor etc., importance of monsoons, El-Nino	
II	International response to climate change		07
	2	IPCC - UNEP,WMO, Structure, IPCC bureau, Task Groups, Principles and procedures, UNFCCC-The convention, Sites and Platforms, Montreal protocol,Kyoto Protocol, Paris agreement, 2020ambition, Talanoa, Documents and decisions, National and local government responses: NAPCC, Glasgow Climate Agreement 2021	
III	Introduction to Disasters		07
	3	Understanding of Hazard, Vulnerability & Disasters. Concept of Risks, Evaluation of Risks. Climate change Risk (IPCC Report): Natural & man-made factors. Driving forces of Vulnerability of cities. Landforms Developing forces- Exogenic and endogenic. Concept of on-site Disasters. Disaster Mitigation – Emerging Trends in Disaster Management - UN Draft	
Types of Disasters			15

IV	4	Classification of Disasters. (Natural & man-made) Natural Disasters: Climatic Disasters (wind & water related): Tropical Cyclone, Floods & Drought. Earth related Disasters (Geological Disaster): Earthquake, Tsunami, Landslides& Volcano Eruption. Man-made Disasters: Industrial (on-site) Disasters: Toxic Gas leak, Explosion, Nuclear, chemical and Technological Disasters (BLEVE-boiling liquid expanding vapor explosion). Accidental Disasters: Rail, Road, Air &Sea. Ecological Disasters: Pollution, Soil Degradation, Loss of Biodiversity & Global warming. Epidemics: Cholera, Typhoid. Biological Disasters: COVID-19	
	5	Global environmental problems- ozone depletion, greenhouse effect, global warming, acid rain, nuclear hazards – Climate change, Eutrophication.	
V	Disaster Management		09
	6	Disaster management Basic measures for Disaster management: Preventive Measures, Preparedness Measures (Disaster mapping profile), Predictability, Forecasting & Warning. Response and Relief measures. Recovery& Rehabilitation measures. Disaster Management Bill, 2005. Institutional Framework for Disaster Management. Role of Media in Disaster Management. Basic Safety Measures (Pre and During): Earthquake & Floods. Case studies - Different disaster management in different counties with different disaster situations.	

Suggested Reading

1. IPCC (2001): Impacts Adaptation and Vulnerability, GRID, Aewndal.
2. Natural Hazards, Bryant Edwards (2005), Cambridge University Press, U.K.
3. Space Technology for Disaster management: A Remote Sensing & GIS Perspective, Roy, P.S. (2000), Indian Institute of Remote Sensing (NRSA), Dehradun.
4. Disaster Management : A disaster Manager’s Handbook, Carter, N W. (1992), Asian Development Bank, Manila.

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Summarize the differences between natural and anthropogenic causes of climate change.	U	
CO-2	Analyze the effectiveness of international climate agreements in addressing climate change	An	PSO-5
CO-3	Apply knowledge of disaster mitigation strategies to evaluate emerging trends in disaster management.	Ap	PSO-5
CO-4	Apply knowledge of disaster management frameworks to analyze case studies of disaster situations in different countries.	AP	PSO-5

CO-5	Apply knowledge of climate forcing agents to analyze the factors contributing to climate change.	AP	PSO-6
CO-7	Develop disaster management plans for specific disaster scenarios.	C	PSO-7

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Name of the Course: Disaster Management

Credits: 3:0:0 (Lecture:Tutorial:Practical)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	1		R, U	F, C	L, T	
2	2	5	R, U	F, C	L, T	
3	3	5	Ap	F, C	L, T	P
4	4	5	Ap	p	L, T	P
5	5	6	C	P		

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓			✓
CO 4		✓		✓
CO 5		✓		✓