University of Kashmir, Srinagar-6, J&K
NAAC Accredited Grade "A"
P.G. Department of Geography & Regional Development
(DST-FIST Sponsored and UGC-SAP Assisted Department)

COURSE STRUCTURE

FOR

CHOICE BASED CREDIT SYSTEM (CBCS)

OF

1st SEMESTER

M. A. / M. Sc. DISASTER MANAGEMENT

(2017 & Onwards)

M.A./M.Sc. Programme in Disaster Management

(2017 & Onwards)

CHOICE BASED CREDIT SYSTEM (CBCS)

Course Description

The M.A / M.Sc Post Graduate Programme in Disaster Management is of two years, based on 96 credits comprising of four semesters. All the 96 credits will spread over 6 different components viz: I) Teaching, II) Tutorial, III) Seminar, IV) Practical, V) Field Tour & VI) Project Work/ Dissertation. The students are offered (44) Papers Comprising of (12) Core Courses, which are compulsory, along with (16) Discipline Centric Theory Courses (8) Generic Elective & (8) Open Elective Courses.

NOTE

A credit means one hour of teaching/work or two hours of practical work/tutorial per week for 16 weeks in a semester.

- ✓ A candidate compulsorily has to obtain 24 credits per semester i.e., 48 credits in one year programme (2 semesters), 96 credits in two year programme (4 semesters).

- ✓ A candidate has to obtain minimum of 24 credits in a semester; 12 credits compulsorily are to be opted from "Core Courses", while the remaining 12 credits can be obtained in the following ways:

- ✓ 8 credits are to be obtained from Discipline centric courses

- ✓ At least 2 credits are to be obtained from Generic Elective courses, however a candidate has an option to take 4credits from the GE Courses

- ✓ A candidate has a choice to take a maximum of 2 credits if required from Open Elective courses

M.A./M.Sc. Programme in Disaster Management .

CHOICE BASED CREDIT SYSTEM (CBCS)

(2017 and Onwards)

Course	Course Title	Category	Hours per week			Credits
			Lectures	Tutorials	Practical	
DM-CR-17101	Introduction to Natural and Man Induced Disasters	Core	4	2	0	4
DM-CR-17102	Remote Sensing, GIS and GPS-I	Core	4	2	0	4
DM-CR-17103	Remote Sensing, GIS and GPS-II	Core	0	0	8	4
DM-DCE-17104	Fundamentals of Disaster Management	Discipline Centric Elective	3	2	0	3
DM-DCE-17105	Understanding Geophysical Environment	Discipline Centric Elective	3	2	0	3
DM-DCE-17106	Disaster Preparedness and Mitigation	Discipline Centric Elective	3	2	0	2
DM-DCE-17107	Regional Hazard and Disaster Management Scenario	Discipline Centric Elective	2	2	0	2
DM-GE-17108	Population and Society	Generic Elective	2	2	0	2
DM-GE-17109	Disaster Prevention	Generic Elective	2	2	0	2
DM-OE-17110	Emergency Response	Open Elective	2	2	0	2
DM-OE-17111	Earthquake Safety and Response	Open Elective	2	2	0	2

DM-CR-17101: INTRODUCTION TO NATURAL & MAN INDUCED DISASTERS

Credit-I

1. Introduction to Hazards and Disasters
2. Hazards- Meaning, characteristics
3. Types, causes and effects of Hazards
4. Disaster Statistics

Credit -II

1. Hydro-meteorological Hazards
2. Floods and Flash Floods, Droughts
3. Tropical Cyclones , Tsunami & Snow Avalanches
4. Climate Change

Credit –III:

1. Geological Hazards
2. Earthquakes
3. Volcanic Eruption
4. Landslides

Credit -IV

1. Understanding Human Hazards
2. Nuclear, Biological and Chemical hazards
3. Air and water pollution & oil spills
4. Forest, coal, and oil Fires

Suggested Readings:

- Bryant Edwards (2005): Natural Hazards, Cambridge University Press, U.K
- Carter, W. Nick, 1991: Disaster Management, Asian Development Bank, Manila
- Firefly Guide to Global Hazards, Robert Louis Kovach, Bill McGuire, Firefly Books, 2004
- H.K. Gupta (2003) Disaster management
- Jolly., Surface History of the Earth
- Natural disasters, Patrick L. Abbott, McGraw-Hill Higher Education, 2004

DM-CR-17102: REMOTE SENSING, GIS AND GPS-I

Credit-I

1. Fundamental of Remote Sensing
2. Electromagnetic Spectrum (EMS)
3. Energy interactions with earth surface features and atmosphere
4. Image Interpretation, Digital Image Processing

Credit-II

1. Remote Sensing Systems
2. EO space programmes
3. Platforms – Spaceborne / Airborne, Sensors-Active/ Passive, Multispectral and Hyperspectral Systems
4. RADAR and LIDAR Systems

Credit-III

1. Introduction to Geographic Information System
2. Components of GIS
3. Spatial and Non-spatial data
4. Data Models- Raster and Vector, processing and analysis/modeling
5. Data dissemination and information presentation

Credit-IV

1. Introduction to GPS systems
2. Applications of GPS
3. GPS-segments
4. Fundamentals of GPS positioning, receivers and limitations

DM-CR- 17103: Remote Sensing, GIS and GPS-II

Credit-I

1. Introduction to Remote Sensing software's
2. Data standards, formats and exchange
3. Image enhancement
4. Interpretation of satellite data, Classification-supervised and unsupervised
5. Accuracy assessment.

Credit-II

1. Introduction to GIS software's
2. GIS Mapping- vector layer (point, line, polygon) creation
3. Attaching attribute data, overlay analysis
4. Network analysis multi-criteria analysis
5. Map designing

Credit-III

1. Working with 3D data
2. Data sources, interpolating point/line elevation data
3. Digital Elevation Model (DEM) - creation methods
4. Terrain Analysis using DEM- landform analysis, derivation of slope/aspect
5. Watershed delineation, drainage morphometric analysis, hypsometric and bathymetry analysis

Credit-IV

1. Introduction to Global Positioning System (GPS) Survey
2. Handling and operation of GPS
3. Data collection using -autonomous & differential mode
4. Post processing of GPS data

DM-DCE-17104 FUNDAMENTALS OF DISASTER MANAGEMENT

Credit-I

1. Disaster Management- Meaning & Definition
2. Elements of disaster management
3. Approaches Scope and Significance
4. Disaster Management Cycle

Credit -II

1. Yokohama Declaration, Objectives of International Decade for Natural Disaster Reduction (IDNDR)
2. Hyogo Framework of action
3. Disaster Management Policy , Principles & Significance of disaster management policy
4. Essential components of disaster management policy- Formulation & execution

Credit -III

1. Case study of:
   i) Disaster Management Policy in United States of America
   ii) Disaster Management Policy in Bangladesh
   iii) Disaster Management Policy in India

Suggested Readings:

- Carter, W. Nick, 1991: Disaster Management, Asian Development Bank, Manila
- Firefly Guide to Global Hazards, Robert Louis Kovach, Bill McGuire, Firefly Books, 2004
- Fundamentals of Disaster Management, Society of Critical Care Medicine, 01-Jan-2003
- Introduction to International *Disaster Management*, Damon P. Coppola - 2010
- Disaster management, H.K. Gupta (2003)
- H.K. Gupta (2003) Disaster management
- Jolly., Surface History of the Earth
- Natural disasters, Patrick L. Abbott, McGraw-Hill Higher Education, 2004

DM-DCE- 17105 UNDERSTANDING GEOPHYSICAL ENVIRONMENT

Credit-I

1. Geomorphology- Nature and scope Geomorphology
2. Role of Geomorphology in understanding Disaster profile of a region
3. Concept of Landform Evolution & earth movements
4. Geomorphic Agents and Processes
5. Configuration of oceans and continents-their role in global distribution of population

Credit-II

1. Hydrosphere
2. Introduction to oceanography& Ocean bottom topography
3. Coastal geomorphology, Ocean currents and their importance
4. Role of oceans in shaping the geo ecology of surrounding land-masses
5. Elnino-southern oscillations, sea waves and storm surges

Credit- III

1. Fundamentals and importance of climatology
2. Atmosphere- structure and composition
3. Insolation, heat-balance of the earth.
4. Extreme weather events- cyclones, thunder storms, lightning, hail storms, windstorms and cloud bursts
5. Green House effect and global climate change

Suggested Readings:

- Alam Clowes & Comfort., Processes and Landforms.
- Bloom, A.L., Geomorphology-A systematic Analysis of Late Cenozoic Landforms
- *Hydrology***:** An Introduction, Wilfried Brutsaert – 2005
- Steers, J.A., Unstable Earth
- Strahler, A.H. & Strahler, A.H., Elements of Physical Geography
- Thornbury, W.D., Principles of Geomorphology

DM-DCE-17106: DISASTER PREPAREDNESS AND MITIGATION

Credit-I

1. Disaster Preparedness: Concept and significance
2. Disaster preparedness measures
3. Disaster preparedness Plan
4. Institutional mechanism for disaster preparedness
5. Disaster Preparedness for people with special needs and vulnerable group (women, children, disabled children)
6. Preparedness with reference to housing and infrastructure.

Credit-II

1. Role of communication, Education and training
2. Role of government
3. Special agencies and forces
4. Role of international agencies and NGOs
5. Community based disaster preparedness-need and significance

DM-DCE-17107 REGIONAL HAZARD AND DISASTER MANAGEMENT SCENARIO

Credit-I

1. Historical Disaster Scenario Jammu and Kashmir
2. Historical Evaluation of Regional extreme events
3. Floods, Earthquakes Impact and adaptation strategies
4. Case Study/examples from recent disasters-2005 earthquake, 2014 Flood
5. Hazard and Vulnerability Scenario of Jammu and Kashmir
6. J&K as multi-hazard zone

Credit-II

1. Disaster Management in Jammu and Kashmir
2. State Disaster Management Policy
3. SDMA structure
4. SDRF and its role in Disaster Management

Suggested Readings:

- Geography of Jammu and Kashmir, Majid Husain – 1998
- ***Geography*** of ***Jammu*** and ***Kashmir***, ***A.*** N. Raina – 1981
- Systematic ***Geography*** of ***Jammu*** and ***Kashmir***, S.A. Qazi – 2005
- Disaster Management Policy of Jammu and Kashmir -Document -2012

DM-GE- 17108 POPULATION AND SOCIETY

Credit-I

1. Relationship between Demography, Society and Economy
2. World population growth and its distribution
3. Population Dynamics of developed and developing countries
4. Concept of population Resources relationship
5. Urbanization and impact

Credit-II

1. Fertility
2. Mortality
3. Migration
4. Population Structures-age and gender
5. Concept of Demographic Transition and population stabilization

No. of Credit: 2

1. Community based disaster management (CBDM)
2. Earthquake safety and preparedness measures

DM-OE-17110 Emergency Response

No. of Credits: 2

1. Incident Response System (IRS)
2. Features of IRS
3. Incident Response Organisation
4. Incident Resources Management
5. Emergency response to fire hazard
6. Emergency response to flood hazard
7. Emergency response to chemical hazards
8. Emergency response to road/rail accidents

DM-OE-17111 **Earthquake safety and response**

No. of Credits : 2

1. Understanding seismic hazard
2. Magnitude and intensity
3. Liquefaction—implications and mitigation
4. Earthquake prediction
5. Earthquake resistant structures
6. Earthquake mitigation at household level
7. Emergency response to earthquakes
8. Mock drill and simulation