National Education Policy-2020

Common Minimum Syllabus for Uttarakhand State Universities and Colleges

SKILL ENHANCEMENT COURSE

Mapping Techniques

2025

For Undergraduate Courses

DEPARTMENT OF GEOGRAPHY
DSB CAMPUS, KUMAUN UNIVERSITY
NAINITAL

List of Papers (SEC) with semester wise titles

Semester 1 -	MT.SEC-01	Introduction to Mapping and Cartography
Semester 2 -	MT.SEC-02	Digital Mapping Tools and Software
Semester 3 -	MT.SEC-03	Mapping Techniques and Data Representation
Semester 4 -	MT.SEC-04	Remote Sensing and Satellite Data in Mapping
Semester 5 -	MT.SEC-05	Mapping for Specific Applications
Semester 6 -	MT.SEC-06	Research Methodology and Project Work

COMMITTEE OF BOARD OF STUDY

Sl. No.	Name and address of external experts/member	
1	Prof. S. Sreekesh, Centre for the Study of Regional Development, School of Social Sciences, Jawahar Lal University, Delhi Email: sreekesh@mail.jnu.ac.in, sreekesh@jnu.ac.in Mob. No. 9013575858	Expert
2	Prof. A. R. Siddiqui, Department of Geography, University of Allahabad, Allahabad, E-mail: arsiddiqui1970@yahoo.com, azizrs@yahoo.com Mobile No. 9450608208	Expert
3	Prof. B. W. Pandey Department of Geography, Delhi School of Economics, University of Delhi 110007. Email: bwpandey@geography.du.ac.in Mobile No.- 9560525260	Expert
4.	Prof. Anita Pande, Department of Geography, DSB Campus, Kumaun University, Nainital, Email: anita.ku.ntl@gmail.com Mob. No. 9411793991	Member
5.	Prof. T. B Singh Govt. Girls' PG College of Commerce, Haldwani Email: Email: drtbsingh1961@gmail.com Mob. No. 9456109466	Member
6.	Prof. Anjali Punera, *Government Degree College, Kotabagh, District – Nainital* Email: dranjalipunera@gmail.com Mob. No. 9837852832	Member
7.	Prof. R C Joshi, Department of Geography, DSB Campus, Kumaun University, Nainital, Email: hod.geog23dsb@gmail.com Mob. No. 8958811453	Head and convener

DRAFT SYLLABUS PREPARATION COMMITTEE

S.N.	NAME	DESIGNATION	DEPARTMENT	AFFILIATION
1.	DR. R. C. JOSHI	PROFESSOR AND HEAD	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
2.	DR. ANITA PANDE	PROFESSOR	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
3.	DR. MANISHA TRIPATHI	ASSOCIATE PROFESSOR	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
4.	DR. MOHAN LAL	ASSISTANT PROFESSOR	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
5.	DR. PRAKASH CHANYAL	ASSISTANT PROFESSOR	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
6.	DR. VINITA JOSHI	ASSISTANT PROFESSOR (c)	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
7.	DR. D. S. PARIHAR	ASSISTANT PROFESSOR (c)	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
8.	DR. MASOOM REZA	ASSISTANT PROFESSOR (c)	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL

PROGRAMME PREREQUISITES

Any student in B.A./B.Sc./B.Com programme (undergraduate level) can opt for Skill Enhancement Course as per university rules.

Program Outcome (POs):

1. Understanding of the Fundamental Principles of Mapping - Develop a strong foundational knowledge of mapping, cartography, and geographic data visualization.
2. Design Effective Maps - Learn to create clear, accurate, and proper visualisation of maps that communicate spatial information.
3. Use of Geographic Information Systems (GIS) - Gain proficiency in using GIS software and tools for mapping, spatial analysis, and data management.

4. Application of Remote Sensing Techniques in Mapping - Understand and apply remote sensing data (e.g., satellite, UAV, LiDAR) in conjunction with GIS to solve real-world problems.
5. Integration of Cartographic and GIS Concepts for Decision Making - Synthesize GIS, mapping, and remote sensing knowledge for spatial decision-making and practical applications in various sectors (e.g., urban planning, disaster management).

Program Specific Outcomes (PSO):

PSO 1: Mapping Fundamentals and Cartography Skills - Demonstrate knowledge of the history and evolution of maps, types of maps, and cartographic principles. Apply map elements such as symbols, scales, projections, and coordinate systems to design maps that effectively communicate spatial data.

PSO 2: Cartographic Design and Visualization - Understand and apply principles of map design including visual hierarchy, color theory, typography, and spatial layout. Use digital mapping tools, including GIS software, to create and analyze various types of maps based on real-world data.

PSO 3: Geographic Information Systems (GIS) Expertise - Gain hands-on experience in GIS tools for data input, management, and analysis (including spatial queries and overlay analysis). Create and customize thematic maps using GIS for detailed spatial analysis and decision-making.

PSO 4: Remote Sensing Data Application - Understand different types of remote sensing data (optical, radar, LiDAR) and their applications in environmental monitoring, land-use mapping, and agriculture. Integrate remote sensing data with GIS platforms to generate detailed, accurate maps for various applications like disaster management, urban planning, and agriculture.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-1) Introduction to Mapping and Cartography

Programme: Under Graduate in Arts/Science	**Year: I**	**Semester: I**
Subject: Skill Enhancement	**Course Code:** MT.SEC-01	**Course Title: Introduction to Mapping and Cartography**

Course Outcomes

1. Understand the fundamental concepts and significance of mapping and cartography.
2. Identify and analyze different types of maps and their applications.
3. Develop skills in understanding coordinate systems and map projections.

Theory-(Credit-1)	**Distribution of marks according the University rule**.	
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**	
Unit	Course Content	Lectures
Unit – I	Overview of Mapping and Cartography: Definition and Importance of Mapping; History and Evolution of Maps; Types of Maps	06
Unit – II	Map Elements: Title, Legend, Scale, Compass, and Introduction to Coordinate Systems (Latitude, Longitude, and Global Coordinate Systems; Introduction to Projections and Distortions Projected Coordinate Systems).	09
Practical (Credit-1)	Map reading, Base map preparation and understanding of coordinate system (WGS84, NAD83 AND UTM)	30

Suggested Readings

- Robinson, A. H. (1995) Elements of Cartography, John Wiley & Sons.
- Slocum, T. A. (2009) Thematic Cartography and Geovisualization, Pearson.
- Longley, P. A. (2015) Geographic Information Science & Systems, Wiley.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-1) Digital Mapping Tools and Software

Programme: Under Graduate in Arts/Science	**Year: I**	**Semester: II**
Subject: Skill Enhancement	**Course Code:** MT.SEC-02	**Course Title: Digital Mapping Tools and Software**

Course Outcomes

1. Develop an understanding of digital mapping and GIS concepts.
2. Gain hands-on experience with GIS software tools such as QGIS/ArcGIS.
3. Learn to create and edit simple digital maps and analyze spatial data.

Theory-(Credit-1)	**Distribution of marks according the University rule**.

Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**	
Unit	Course Content	Lectures
Unit – I	**A brief Revision of Semester - I (Introduction to Mapping and Cartography)**	2
	Introduction to Digital Mapping: Transition from Paper Maps to Digital Mapping; Basic Functions of Digital Mapping Tools; Introduction to Geospatial Data and GIS (Geographic Information Systems).	7
Unit – II	Introduction to GIS Software: Overview of GIS Tools (e.g., QGIS, ArcGIS); Basic GIS Interface and Functions; Importing and Viewing Spatial Data.	6
Practical (Credit - 1)	Creating and Editing Simple Maps Using GIS: Adding Layers, Points, Lines, and Polygons; Introduction to Spatial Data Formats (Shapefiles, GeoJSON), Basic Data Analysis in GIS: Simple Queries and Data Filtering; Creating Basic Thematic Maps.	30

Suggested Readings

- Bolstad, P. (2016) GIS Fundamentals: A First Text on Geographic Information Systems, XanEdu.
- DeMers, M. N. (2017) Fundamentals of Geographic Information Systems, Wiley.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-1) Mapping Techniques and Data Representation

Programme: Under Graduate in Arts/Science	**Year: II**	**Semester: III**
Subject: Skill Enhancement	**Course Code:** MT.SEC-03	**Course Title: Mapping Techniques and Data Representation**

Course Outcomes

1. Enhance proficiency in advanced mapping techniques and cartographic design.
2. Understand the different geospatial data types and their applications.

Theory-(Credit-1)	**Distribution of marks according the University rule**.

Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**

Unit	Course Content	Lectures
Unit – I	**A brief Revision of Semester - II (Digital Mapping Tools and Software)**	3
	Advanced Mapping Techniques: Use of Symbology and Cartographic Design; Layering, Labelling, and Annotation in GIS; Design and Layout of Thematic Maps (Choropleth, Graduated Symbol, etc.)	6
Unit – II	Geospatial Data Types: Raster vs. Vector Data; Spatial Data Structures and Attributes; Working with Satellite Imagery and Aerial Photography	6
Practical (Credit-1)	Map Projections and Distortion: Distortions in Shape, Area, Distance, and Direction; Selecting Appropriate Projections for Different Maps. Data Classification and Visualization: Techniques for Classifying Spatial Data; Cartographic Visualization	30

Suggested Readings

• Dent, B. D. (2009) Cartography: Thematic Map Design, McGraw-Hill.
• Tobler, W. (2002) Geographical Information Science, Springer.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-1) Remote Sensing and Satellite Data in Mapping

Programme: Under Graduate in Arts/Science	**Year: II**	**Semester: IV**
Subject: Skill Enhancement	**Course Code:** MT.SEC-04	**Course Title: Remote Sensing and Satellite Data in Mapping**

Course Outcomes

1. Understanding of remote sensing data and their characteristics
2. Application of Remote Sensing Data in Map making.

Theory-(Credit-1)	**Distribution of marks according the University rule**.
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**

Unit	Course Content	Lectures
Unit – I	**A brief Revision of Semester - III (Mapping Techniques and Data Representation)**	3
	Introduction to Remote Sensing: Principles of Remote Sensing; Types of Sensors (Passive and Active); Applications of Remote Sensing in Mapping.	6
Unit – II	Satellite Imagery and Aerial Photography: Types of Satellite Imagery (Multispectral, Panchromatic, etc.); Using Satellite Data in Mapping and Analysis; Image Pre-processing Techniques (Enhancement, Filtering).Types and fundamentals of Air Photo interpretation	6
Practical (Credit-1)	Image Classification and Analysis: Image Interpretation and Feature Extraction; Supervised and Unsupervised Classification; Change Detection Techniques, Application of LiDAR (Light Detection and Ranging) in creating digital elevation models (DEMs) and analyzing the terrain.	30

Suggested Readings

- Jensen, J. R. (2013) Remote Sensing of the Environment, Pearson.
- Lillesand, T. M. (2015) Remote Sensing and Image Interpretation, Wiley.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-1) Mapping for Specific Applications

Programme: Under Graduate in Arts/Science	**Year: III**	**Semester: V**
Subject: Skill Enhancement	**Course Code:** MT.SEC-05	**Course Title: Mapping for Specific Applications**

Course Outcomes

1. Understand and apply mapping techniques for urban planning and land use analysis.
2. Develop skills in environmental mapping, including natural resource assessment and impact analysis.
3. Utilize mapping tools for disaster management, risk assessment, and emergency response planning.

Theory-(Credit-1)	**Distribution of marks according the University rule**.	
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**	
Unit	Course Content	Lectures
Unit – I	**A brief Revision of Semester - IV (Remote Sensing and Satellite Data in Mapping)**	3
	Urban and Land Use Mapping: Mapping for Urban Planning; Land Use Mapping and Change Detection.	6
Unit – II	Environmental Mapping: Natural Resource Mapping (Water Bodies, Forests, etc.); Environmental Impact Assessment Mapping; Disaster Management and Risk Mapping, Emergency Response Mapping.	6
Practical (Credit-1)	Landuse/land cover (LULC), Land, water and Forest Mapping	30

Suggested Readings

• Goodchild, M. F. (2016) GIS and Environmental Modeling, Oxford University Press.
• Burrough, P. A. (2015) Principles of Geographical Information Systems, Oxford.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-1) Research Methodology and Project Work

Programme: Under Graduate in Arts/Science	**Year: III**	**Semester: VI**
Subject: Skill Enhancement	**Course Code:** MT.SEC-06	**Course Title: Research Methodology and Project Work**

Course Outcomes

1. Application of GIS techniques for spatial analysis.
2. Develop skills in project planning, data collection, and map making.
3. Execute an independent or group GIS-based mapping project related to urban, environmental, or disaster management.

Theory-(Credit-1)	**Distribution of marks according the University rule**.	
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**	
Unit	Course Content	Lectures
Unit – I	Preparation of Project outline: Introduction, Statement of Problem, objectives, Literature review, data source and methodology, Hypothesis, Research Design, Research Ethics, chapterisation schemes and references.	15
Practical (Credit-1)	**Capstone Project**: Field survey-based project dissertation preparation using GIS (Independent or Group Project on a relevant topic viz. Physical landscape, Urban, Environmental, Disaster, etc). (Students are required to prepare 15–20-pages dissertation and must be submitted it in hard copy in the Department one week before the commencement of the Theory Examinations. The evaluation and viva –voce examination will be conducted by the department as per the university guideline.)	30

Note: In 6th semester the fresh entry (those who have not opted at least two previous semesters of this course) is not Allowed.

Suggested Readings

• Longley, P. A. (2015) Geographic Information Science & Systems, Wiley.
• Tomlin, C. (2013) GIS and Cartographic Modeling, Esri Press.

National Education Policy-2020

Common Minimum Syllabus for Uttarakhand State Universities and Colleges

SKILL ENHANCEMENT COURSE

Climate Change and Adaptability in Mountains

2025

For Undergraduate Courses

DEPARTMENT OF GEOGRAPHY

DSB CAMPUS, KUMAUN UNIVERSITY NAINITAL

List of Papers (SEC) with semester wise titles

Semester 1 – CCAM.SEC-01	Introduction to Mountain Ecosystems and Geography
Semester 2 - CCAM.SEC-02	Fundamentals of Climate Change
Semester 3 - CCAM.SEC-03	The Impact of Climate Change on Mountain Regions
Semester 4 - CCAM.SEC-04	Climate Change Mitigation and Adaptation in Mountain Regions
Semester 5 - CCAM.SEC-05	Mountain Conservation and Ecosystem Services
Semester 6 - CCAM.SEC-06	Mountain Research Project and Climate Change Advocacy

COMMITTEE OF BOARD OF STUDY

Sl. No.	Name and address of external experts/member	
1	Prof. S. Sreekesh, Centre for the Study of Regional Development, School of Social Sciences, Jawahar Lal University, Delhi Email: sreekesh@mail.jnu.ac.in, sreekesh@jnu.ac.in Mob. No. 9013575858	Expert
2	Prof. A. R. Siddiqui, Department of Geography, University of Allahabad, Allahabad, E-mail: arsiddiqui1970@yahoo.com, azizrs@yahoo.com Mobile No. 9450608208	Expert
3	Prof. B. W. Pandey Department of Geography, Delhi School of Economics, University of Delhi 110007. Email: bwpandey@geography.du.ac.in Mobile No.- 9560525260	Expert
4.	Prof. Anita Pande, Department of Geography, DSB Campus, Kumaun University, Nainital, Email: anita.ku.ntl@gmail.com Mob. No. 9411793991	Member
5.	Prof. T. B Singh Govt. Girls' PG College of Commerce, Haldwani Email: Email: drtbsingh1961@gmail.com Mob. No. 9456109466	Member
6.	Prof. Anjali Punera, Government Degree College, Kotabagh, District – Nainital Email: dranjalipunera@gmail.com Mob. No. 9837852832	Member
7.	Prof. R C Joshi, Department of Geography, DSB Campus, Kumaun University, Nainital, Email: hod.geog23dsb@gmail.com Mob. No. 8958811453	Head and convener

DRAFT SYLLABUS PREPARATION COMMITTEE

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4.	DR. MOHAN LAL	ASSISTANT PROFESSOR	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
5.	DR. PRAKASH CHANYAL	ASSISTANT PROFESSOR	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
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7.	DR. D. S. PARIHAR	ASSISTANT PROFESSOR (c)	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
8.	DR. MASOOM REZA	ASSISTANT PROFESSOR (c)	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL

PROGRAMME PREREQUISITES

Any student in B.A./B.Sc./B.Com programme (undergraduate level) can opt for Skill Enhancement Course as per university rules.

Program Outcome (POs):

1. Understand Climate Change Impacts: Analyze the causes and effects of climate change on mountain ecosystems, including glaciers, biodiversity, and water resources.
2. Apply Scientific Tools: Utilize remote sensing, GIS, and climate data models to assess and monitor environmental changes in mountainous regions.
3. Develop Adaptation Strategies: Propose sustainable adaptation and mitigation measures for mountain communities affected by climate-induced hazards.
4. Engage in Policy and Community Action: Contribute to climate policies and community-based initiatives for resilience and disaster risk reduction in mountain environments.

Program Specific Outcomes (PSO):

PSO 1: **Gain Expertise in Mountain Climate Studies:** Develop specialized knowledge of climate variability, glacial changes, and ecological responses in high-altitude regions.
PSO 2: **Enhance Research and Analytical Skills:** Acquire hands-on experience with fieldwork, data analysis, and geospatial technologies to study climate change in mountains.
PSO 3: Address Climate Risks and Adaptation: Formulate practical solutions to reduce the vulnerability of mountain communities to climate-related hazards.
PSO 4: **Promote Sustainable Development:** Integrate environmental, social, and policy perspectives to support climate resilience and sustainable development in mountainous regions.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-2) Introduction to Mountain Ecosystems and Geography

Programme: Under Graduate in Arts/Science	**Year: I**	**Semester: I**
Subject: Skill Enhancement	**Course Code:** CCAM.SEC-06	**Course Title: Introduction to Mountain Ecosystems and Geography**

Course Outcomes

1. Understand the fundamental concepts of mountains, their types, and geographical significance.
2. Analyze the climatic characteristics and microclimates of mountain regions.
3. Examine mountain ecosystems, biodiversity, and ecological importance.
4. Assess human settlements, indigenous communities, and socioeconomic activities in mountain regions.

Theory-(Credit-1)	**Distribution of marks according the University rule**.	
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory**	
Unit	Course Content	Lectures
Unit – I	Introduction to Mountains, Types of Mountains, Major Mountain Ranges and their Geographic Importance	07
Unit – II	Mountain Climate; Flora, Fauna and Biodiversity Hotspots.	08
Practical (Credit - 1)	Comparison of rainfall and temperature data across different mountains focusing on variations with altitude. Comparison of flora and fauna based on mountain ranges and altitudes.	30

Suggested Readings

- Barry, R.G. (2008) Mountain Weather and Climate, Cambridge University Press.
- Beniston, M. (2006) Mountain Environments in Changing Climates, Routledge.
- D.J. Bliss, World Realms George Constantz (2014) Ice, Fire, and Nutcrackers: A Rocky Mountain Ecology, University of Utah Press, 2014
- Ellen Wohl (2021) Something Hidden in the Ranges: The Secret Life of Mountain Ecosystems Oregon State University Press
- Laura L. Scheiber and María N. Zedeño (2015) Engineering Mountain Landscapes: An Anthropology of Social Investment, University of Utah Press
- Roderick Peattie (2017) Mountain Geography: A Critique and Field Study Hardcover, Harvard University Press

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-2) Fundamentals of Climate Change

<table>
<tr><td colspan="2">Programme: Under Graduate in Arts/Science</td><td colspan="2">Year: I</td><td>Semester: II</td></tr>
<tr><td colspan="2">Subject: Skill Enhancement</td><td colspan="2">Course Code: CCAM.SEC-02</td><td>Course Title: Fundamentals of Climate Change</td></tr>
<tr><td colspan="5">Course Outcomes
1. Develop an understanding of climate change, its natural and anthropogenic causes, and greenhouse gas dynamics.
2. Understand the science behind climate change, carbon cycles, feedback mechanisms, and climate data models.
3. Identification of spatio-temporal climatic data variation.</td></tr>
<tr><td>Theory-
(Credit-1)</td><td colspan="4">Distribution of marks according the University rule.</td></tr>
<tr><td colspan="3">Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1</td><td colspan="2">15 hrs for 1 credit theory</td></tr>
<tr><td>Unit</td><td colspan="3">Course Content</td><td>Lectures</td></tr>
<tr><td rowspan="2">Unit – I</td><td colspan="3">A brief Revision of Semester - I (Introduction to Mountain Ecosystems and Geography)</td><td>2</td></tr>
<tr><td colspan="3">Introduction to Climate Change, Natural vs. Anthropogenic Causes, Greenhouse Gases; Role of International agencies: United Nations Framework Convention on Climate Change (UNFCCC) and Intergovernmental Panel on Climate Change (IPCC)</td><td>07</td></tr>
<tr><td>Unit – II</td><td colspan="3">Impacts of Climate Change, Global Warming, Extreme Weather, Sea Level Rise, Climate Science, Carbon Cycle</td><td>06</td></tr>
<tr><td>Practical
(Credit-1)</td><td colspan="3">Data base creation based on literature survey of climate research findings from different parts of the world. Graphical plotting of climatic data and trend analysis.</td><td>30</td></tr>
</table>

Suggested Readings

- Ronald D. Brunner and Amanda H. Lynch (2010) Adaptive Governance and Climate Change, American Meteorological Society.
- IPCC (2021) Climate Change and the Cryosphere: IPCC Special Report.
- Messerli, B., & Ives, J.D. (1997) Mountains of the World: A Global Priority, The Parthenon Publishing Group.
- DS Lal, Climatology

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-2) The Impact of Climate Change on Mountain Regions

Programme: Under Graduate in Arts/Science	**Year: II**	**Semester: III**
Subject: Skill Enhancement	**Course Code:** CCAM.SEC-03	**Course Title: The Impact of Climate Change on Mountain Regions**

Course Outcomes

1. Identify the impacts of climate change on mountain ecosystems.
2. Analyze shifts in alpine flora and fauna, habitat loss, and conservation challenges.
3. Examine mountain hazards, such as landslides, avalanches, and infrastructure vulnerabilities.

Theory-(Credit-1)	**Distribution of marks according the University rule**.	
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory**	
Unit	Course Content	Lectures
Unit – I	**A brief Revision of Semester -II (Fundamentals of Climate Change)**	3
	Impacts of Climate Change on Mountain: Rising temperature, Melting Glaciers, GLOF, Increased Natural Hazards, Water Insecurity, Shifts in Alpine Flora and Fauna, Impact on Indigenous and Local Communities; Cost of Climate Change Impacts: Economic losses assessment of Climate-related disasters damages annually to infrastructure, agriculture, health, and economies.	12
Practical (Credit -1)	Hazard zone mapping using remote sensing data and GIS techniques, identification of timber line shifts, and preparation of a list of threatened species.	30

Suggested Readings

- Gary D. Libecap and Ariel Dinar (2024) American Agriculture, Water Resources, and Climate Change, University of Chicago Press
- Gregg Garfin, Angela Jardine, Robert Merideth, Mary Black and Sarah LeRoy (Editted) 2013 Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment, Island Press.
- Price, M.F. (2015) Mountain Geography: Physical and Human Dimensions, University of California Press.
- UNEP (2012) Mountains and Climate Change: A Global Concern, United Nations Environment Programme.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-2) Climate Change Mitigation and Adaptation in Mountain Regions

Programme: Under Graduate in Arts/Science	**Year: II**	**Semester: IV**
Subject: Skill Enhancement	**Course Code:** CCAM.SEC-04	**Course Title: Climate Change Mitigation and Adaptation in Mountain Regions**

Course Outcomes

1. Understand mitigation strategies, including greenhouse gas reduction and sustainable tourism.
2. Explore afforestation, carbon sequestration, and eco-friendly infrastructure in mountain regions.
3. Learn about adaptation strategies, disaster risk reduction, and climate-resilient planning.
4. Analyze water resource management, trans boundary issues, and policy frameworks for mountain regions.

Theory-(Credit-1)	**Distribution of marks according the University rule**.

Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory**

Unit	Course Content	Lectures
Unit – I	**A brief Revision of Semester -III (The Impact of Climate Change on Mountain Regions)**	03
	Climate Change Mitigation Strategies: Reducing Greenhouse Gases, Carbon Sequestration, Afforestation, Sustainable Tourism	05
Unit – II	Climate Change Adaptation Strategies: Climate Resilient Planning with special reference to Eco-friendly Infrastructure, Disaster Risk Reduction, Water Resource Management, Tran boundary and Water Issues. Limitation associated with adaptation and mitigation.	07
Practical (Credit -1)	Identification of land use changes using remote sensing techniques/Case study of climate change adaption strategies at local level and Analysis of carbon sequestration.	30

Suggested Readings

• UNESCO (2018) Climate Change and Mountain Ecosystems.
• WWF (2020) Adapting to Climate Change in Mountain Regions.

DEPARTMENT OF GEOGRAPHY

B.A./B.Sc./B.Com.

SKILL ENHANCEMENT COURSE (SEC-2) Mountain Conservation and Ecosystem Services

Programme: Under Graduate in Arts/Science	**Year: III**	**Semester: V**
Subject: Skill Enhancement	**Course Code:** CCAM.SEC-05	**Course Title: Mountain Conservation and Ecosystem Services**

Course Outcomes

1. Identify conservation challenges, including deforestation, overgrazing, and biodiversity threats.
2. Understand techniques for protecting endemic and threatened species in mountain environments.
3. Explore the role of mountains in regulating water cycles, and ecosystem services.
4. Analyze the importance of protected areas, national parks, and community-based conservation initiatives.

Theory- (Credit-1)	**Distribution of marks according the University rule**.

Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory**

Unit	Course Content	Lectures
Unit – I	**A brief Revision of Semester -IV (Climate Change Mitigation and Adaptation in Mountain Regions)**	03
	Conservation: Concept and Challenges, Land, Water and Forest Resources.	06
Unit – II	Ecosystem Services : Regulating services, Provisioning services, Cultural services and Supporting services	06
Practical (Credit-1)	Village survey-based identification and Mapping of Land/ Water/ Forest Resources. Creation of environmental awareness in the village through community participation.	30

Suggested Readings

- IUCN (2019) Mountain Conservation and Biodiversity Protection.
- FAO (2017) Sustainable Mountain Development.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-2) Mountain Research Project and Climate Change Advocacy

Programme: Under Graduate in Arts/Science	**Year: III**	**Semester: VI**
Subject: Skill Enhancement	**Course Code:** CCAM.SEC-06	**Course Title: Research Project based on Climate change in Mountain region**

Course Outcomes

1. Develop research methodologies for mountain studies, including field techniques and data analysis.
2. Understand ethical considerations in research and strategies for climate change advocacy.
3. Assess the roles of NGOs and government bodies in climate awareness and public engagement.
4. Conduct a final research project on climate change issues, including report writing and presentation.

Theory- (Credit-1)	**Distribution of marks according the University rule**.
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory**

Unit	Course Content	Lectures
Unit – I	Preparation of Project outline: Introduction, Statement of Problem, objectives, Literature review, data source, methodology, Hypothesis, Research Design, Research Ethics, chapterisation schemes and references.	15
Practical (Credit -1)	**Capstone Project**: Field survey-based project dissertation preparation using GIS (Independent or Group Project) on a relevant topic on climate change issues, Urban, Environmental, Disaster, etc. Students are required to prepare 20–25-pages dissertation and must be submitted it in hard copy in the Department one week before the commencement of the Theory Examinations. The evaluation and viva – voce examination will be conducted by the department as per the university guidelines.)	30

Note: In 6th semester the fresh entry (those who have not opted at least two previous semesters of this course) is not allowed.

Suggested Readings

• Global Mountain Partnership (2021) Climate Action in Mountain Regions.
• Esri (2020) GIS for Climate Change and Environmental Research.

National Education Policy-2020

Common Minimum Syllabus for Uttarakhand State Universities and Colleges

SKILL ENHANCEMENT COURSE
Disaster Management
2025
For Undergraduate Courses

DEPARTMENT OF GEOGRAPHY
DSB CAMPUS, KUMAUN UNIVERSITY
NAINITAL

COMMITTEE OF BOARD OF STUDY

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3	Prof. B. W. Pandey Department of Geography, Delhi School of Economics, University of Delhi 110007. Email: bwpandey@geography.du.ac.in Mobile No.- 9560525260	Expert
4.	Prof. Anita Pande, Department of Geography, DSB Campus, Kumaun University, Nainital, Email: anita.ku.ntl@gmail.com Mob. No. 9411793991	Member
5.	Prof. T. B Singh Govt. Girls' PG College of Commerce, Haldwani Email: Email: drtbsingh1961@gmail.com Mob. No. 9456109466	Member
6.	Prof. Anjali Punera, Government Degree College, Kotabagh, District – Nainital Email: dranjalipunera@gmail.com Mob. No. 9837852832	Member
7.	Prof. R C Joshi, Department of Geography, DSB Campus, Kumaun University, Nainital, Email: hod.geog23dsb@gmail.com Mob. No. 8958811453	Head and convener

DRAFT SYLLABUS PREPARATION COMMITTEE

S.N.	NAME	DESIGNATION	DEPARTMENT	AFFILIATION
1.	DR. R. C. JOSHI	PROFESSOR AND HEAD	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
2.	DR. ANITA PANDE	PROFESSOR	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL
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8.	DR. MASOOM REZA	ASSISTANT PROFESSOR (c)	GEOGRAPHY	KUMAUN UNIVERSITY, NAINITAL

PROGRAMME PREREQUISITES
Any student in B.A./B.Sc./B.Com programme (undergraduate level) can opt for Skill Enhancement Course as per university rules.

List of Papers (SEC) with semester wise titles

Semester 1 - DM.SEC-01	Basic Concepts of Disaster Management
Semester 2 - DM.SEC-02	Disaster Preparedness
Semester 3 - DM.SEC-03	Disaster Response
Semester 4 - DM.SEC-04	Disaster Rehabilitation
Semester 5 - DM.SEC-05	Community Based Disaster Management
Semester 6 - DM.SEC-06	Disaster Management and Planning

PROGRAMME OUTCOMES [POs]:

PO1: Enrichment of Intellectual Ability: The programme develops students' comprehensive understanding of the various dimensions of disaster management. It also helps to learn and understand the concepts, thoughts, and ideas about disaster management.

PO2: Inculcation of Planning Abilities: The programme develops effective planning abilities including time management, resource management, delegation skills and organizational skills of students which may develop their leadership qualities.

PO3: Appropriate Application of Knowledge Methodological Tools: The programme makes a sincere attempt of familiarizing students with critical knowledge and methodological tools which help them in making applications of new ideas, thoughts, and concepts in the real world.

PO4: Formation of Professional Identity: The programme intends to develop professional skills among students that would help them in building their professional identity as well becoming professional leadership from local to global level.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC-1) Basic Concepts of Disaster Management

Programme: Under Graduate in Arts/Science	**Year: I**	**Semester: I**
Subject: Skill Enhancement	**Course Code:** DM.SEC-01	**Course Title: Basic Concepts of Disaster Management**

Course Outcomes
1. To provide students an understanding the need for studying the disaster management
2. Develop an understanding about the various types of disasters.

Theory- (Credit-1)	**Distribution of marks according the University rule**.
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**

Unit	Course Content	Lectures
Unit – I	Introduction to the nature and human interaction; Hazards and Disasters; Natural disasters: earthquakes, floods drought, landside, land subsidence, cyclones, volcanoes, tsunami, avalanches, and global climate extremes. Man-made disasters: Terrorism, gas and radiations leaks, toxic waste disposal, oil spills, and forest fires; Disaster Management Cycle.	09
Unit – II	Risk and its concept and analysis; Risk Reduction; Vulnerability: Concept and analysis, Methodologies and tools for assessing Hazard	06
Practical (Credit-1)	**Class room work:** Risk Assessment exercises, Vulnerability Analysis Exercises, Group Discussion/ Presentation/Quiz Hands-on Exercise: First Aid Bandaging- Control bleeding, Protect the wound, Immobilize injuries and Secure dressing **Field Exercise:** Field report writing (10 to 20 Pages) based on the study carried out at disaster prone area. (It should not be copy/ cut and paste from the Internet or other sources)	30

Suggested Readings:

1. Carter, W.N. (1992) Disaster Management: A Disaster Manager's Handbook, Asian Development Bank
2. Damon, P. Copola, (2006) Introduction to International Disaster Management, Butterworth Heineman.
3. Disaster Management Guidelines, GOI-UND Disaster Risk Program (2009-2012).
4. Feilden, B. 1987, “Between Two Earthquakes; Cultural Property in Seismic Zones”, ICCROM and Getty Conservation Institute
5. Getty Conservation Institute, Online Bibliography for Museum Emergency Programme; http://gcibibs.getty.edu/asp/ accessed on 25 August 2008
6. Gupta A.K., Niar S.S and Chatterjee S. (2013) Disaster management and Risk Reduction, Role of Environmental Knowledge, Narosa Publishing House, Delhi.
7. Modh S. (2010) Managing Natural Disasters, Mac Millan publishers India LTD.
8. Murthy D.B.N. (2012) Disaster Management, Deep and Deep Publication PVT. Ltd. New Delhi.
9. Stovel, H. 1998, “Risk Preparedness: A Management Manual for World Cultural Heritage”, Rome, ICCROM

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc.
SKILL ENHANCEMENT COURSE (SEC 2) Disaster Preparedness

Programme: Under Graduate in Arts/Science	**Year: I**	**Semester: II**
Subject: Skill Enhancement	**Course Code:** DM..SEC-02	**Course Title: Disaster Preparedness**

Course Outcomes
Developing skills for risk and vulnerability assessment.
Recognizing the importance of early warning system and disaster monitoring.
Developed the concept and importance of Disaster Preparedness.

Theory- (Credit-1)	**Distribution of marks according the University rule**.
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**

Unit	**Course Content:** Disaster Preparedness	Lectures
Unit 1	**A brief Revision of Semester - I (Basic Concepts of Disaster Management)**	3
	Disaster Preparedness: Concept and Nature, Components of Disaster Preparedness: Prevention, Mitigation, Disaster Preparedness Plan; Prediction; Early Warnings and Safety Measures of Disaster.	
Unit 2	Disaster Preparedness for people with special needs and Vulnerable groups; Role of Information, Education, communication and Training; Role of Government; International organizations and NGO; Role of Technology in Disaster Preparedness.	05
Practical (Credit-1)	i. **Class Room Exercise:** Preparation of First-aid and Emergency Kit.	30
	ii. **Field Exercise** a. Preparation of a base map showing the infrastructure available; Preparation of Telephone Directory of all line department (electricity, water, transportation, and communication networks) **b.** Field report writing (10 to 20 Pages) of the campus/college area based on the above a. and b. (It should not be copy/ cut and paste from the Internet or other sources)	

Suggested Readings

1. Alley, E.E, 1993, "Combating the Vulnerability of Communities" in P.A. Merriman and C.W.A. Browitt (Eds.), Natural Disasters: Protecting Vulnerable Communities, Thomas Telford, London.
2. Asian Development Bank, 199 1, Disaster Mitigation in Asia and the Pucifjc, Manila.
3. Barker, George W and Dwight W. Chapman (Eds.) 1962, Man and Socieiy in Disuslel; Basic Books, New York.
4. Bhargava, Gopal, 1992, Environmental Challenges and Ecological Disaster-Global Perspective, Mittal Publications, New Delhi
5. Goel, S.L and Ram Kumar (Eds,), 2001, Disaster Management, Deep & Deep, New Delhi.
6. Government of India, Ministry of Agriculture, 2002, The Report of 'the High-Powered Committee on Disaster Management, New Delhi.
7. Government of India, Ministry of Home Affairs, Annual Report, 2003-2004, New Delhi.
8. Government of India, Ministry of Information and Broadcasting, India 2004, A Reference Manual, New Delhi.
9. Planning Commission, Xth Five Year Plan, 2002-2007, New Delhi.
10. Sharma, Vinod K. (Ed.), 1999, Disaster Management, Indian. Institute of Public Administration, New Delhi.
11. The Economic Times, 27 February, 2006.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC 3) Disaster Response

<table>
<tr><td colspan="2">Programme: Under Graduate in Arts/Science</td><td colspan="2">Year: II</td><td>Semester: III</td></tr>
<tr><td colspan="2">Subject: Skill Enhancement</td><td colspan="2">Course Code: DM..SEC-03</td><td>Course Title: Disaster Response</td></tr>
<tr><td colspan="5">Course Outcomes
1. Prioritizing actions based on the severity of the situation and available resources.
2. Rapid assessment of the situation, including the extent of damage and immediate needs.
3. To understand the importance of Response.
4. To develop insight to evaluate the role played by Search and Rescue team.
5. To integrated policy to strengthen and expand the capacity, preparedness and response of the various agencies to disasters.</td></tr>
<tr><td>Theory-
(Credit-1)</td><td colspan="4">Distribution of marks according the University rule.</td></tr>
<tr><td colspan="3">Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1</td><td colspan="2">15 hrs for 1 credit theory, 30 hrs for 1 credit practical</td></tr>
<tr><td>Unit</td><td colspan="3">Course Content: Disaster Response</td><td>Lectures</td></tr>
<tr><td rowspan="2">Unit 1</td><td colspan="3">A brief Revision of Semester - II (Disaster Preparedness)</td><td>03</td></tr>
<tr><td colspan="3">Disaster Response: Nature and Concept; Disaster Response Plan; Communication; Participation; Search; Rescue; Evacuation and Logistic Management.</td><td>06</td></tr>
<tr><td>Unit 2</td><td colspan="3">Role of Government; International and NGO Bodies; Psychological Response and Management (Trauma, Stress, Rumor and Panic); Relief and Recovery; Medical Health Response to Different Disasters.</td><td>06</td></tr>
<tr><td rowspan="2">Practical
(Credit-1)</td><td colspan="3">i. Class room work
Formation of Rescue and Evacuation plan, Group discussion, Presentations and Quiz</td><td rowspan="2">30</td></tr>
<tr><td colspan="3">ii. Field Exercise
CPR (Cardiopulmonary resuscitation), Mock drills: Fire fighting and Earthquake.
Field report writing (10 to 20 Pages) based on the CPR training and drills performed.
(It should not be copy/ cut and paste from the Internet or other sources)</td></tr>
</table>

Suggested Readings

1. "Special Issue on Crisis and Management" Asian Review of Public Administration 2, No. 1-2 (January – December 1990): 1-122.
2. Anderson, M.B. and P.J. Woodrow, 1998, Rising from the Ashes: Development strategies in Times of Disaster, Lynne Rienner Publishers, London.
3. Annual Report, Ministry of Home Affairs, Government of India, New Delhi, 2002 – 2003, 2003 – 2004, 2004 – 2005.
4. Annual Reports, Ministry of Agriculture, Government of India, New Delhi, 1996 – 1997, 1998 – 1999, 1999 – 2000, 2000 – 2001, 2001 – 2002, 2002 – 2003, 2003 – 2004, 2004 – 2005.
5. Carter W. Nick, 1992, Disaster Management: A Disaster Manager's Handbook, Asian Development Bank, Manila.
6. Down to Earth, Vol. 10, No. 6, Centre of Science and Environment, New Delhi, India, August 15, 2001.
7. Maharashtra Disaster Management Plan, 1998, Risk Assessment and Vulnerability analysis, Government of Maharashtra, Mumbai.
8. Manual on natural Disaster Management in India, 2001, NCDM, IIPA, New Delhi.
9. Mohan, Munasinghe and Clarke, Caroloine (eds.), 1995, Disaster Prevention for Sustainable Development – Economic and policy Issues, IDNDR and World Bank, Washington.

   Natural Disaster Reduction - South Asian Regional Report, 1994, Ministry of Agriculture, Government of India, New Delhi.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com Geography
SKILL ENHANCEMENT COURSE (SEC 4) Disaster Rehabilitation

Programme: Under Graduate in Arts/Science	**Year: II**	**Semester: IV**
Subject: Skill Enhancement	**Course Code:** DM.SEC-04	**Course Title: Disaster Rehabilitation**

Course Outcomes

1. To develop and implement comprehensive rehabilitation plans based on specific need of the community.
2. Ensuring sustainable and resilient rebuilding practices to mitigate future disaster risks.

Theory-(Credit-1)	**Distribution of marks according the University rule**.
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**

Unit	**Course Content**	Lectures
Unit 1	**A brief Revision of Semester - III (Disaster Response)**	03
	Reconstruction and Rehabilitation as a Means of Development; Damage Assessment; Post Disaster effects and Remedial Measures; Creation of Long-term Job Opportunities and Livelihood Options.	05
Unit 2	Disaster Resistant House Construction; Sanitation and Hygiene; Education and Awareness; Dealing with Victims' Psychology; Long-term Counter Disaster Planning; Role of Educational Institution; Disaster and Development.	07
Practical (Credit-1)	i. **Disaster awareness and Stress management:** Street play on Disaster awareness and importance of sanitation and hygiene, Stress management exercises.	30
	i. Field Exercise Need and Damage assessment field survey: Student may select nearby area affected by hazard/ disaster to collect data on shelter , Water, sanitation, and hygiene, Food security, Health facilities, Livelihood impacts and Infrastructure damage (roads, bridges, buildings) Field report writing (10 to 20 Pages). (It should not be copy/ cut and paste from the Internet or other sources)	

Suggested Readings

1. "Special Issue on Crisis and Management" Asian Review of Public Administration 2, No. 1-2 (January – December 1990): 1-122.
2. Anderson, M.B. and P.J. Woodrow, 1998, Rising from the Ashes: Development strategies in Times of Disaster, Lynne Rienner Publishers, London.
3. Annual Report, Ministry of Home Affairs, Government of India, New Delhi, 2002 – 2003, 2003 – 2004, 2004 – 2005.
4. Annual Reports, Ministry of Agriculture, Government of India, New Delhi, 1996 – 1997, 1998 – 1999, 1999 – 2000, 2000 – 2001, 2001 – 2002, 2002 – 2003, 2003 – 2004, 2004 – 2005.
5. Carter W. Nick, 1992, Disaster Management: A Disaster Manager's Handbook, Asian Development Bank, Manila.
6. Down to Earth, Vol. 10, No. 6, Centre of Science and Environment, New Delhi, India, August 15, 2001.
7. Maharashtra Disaster Management Plan, 1998, Risk Assessment and Vulnerability analysis, Government of Maharashtra, Mumbai.
8. Manual on natural Disaster Management in India, 2001, NCDM, IIPA, New Delhi.
9. Mohan, Munasinghe and Clarke, Caroloine (eds.), 1995, Disaster Prevention for Sustainable Development – Economic and policy Issues, IDNDR and World Bank, Washington.
10. Natural Disaster Reduction - South Asian Regional Report, 1994, Ministry of Agriculture, Government of India, New Delhi.

DEPARTMENT OF GEOGRAPHY
B.A./B.Sc./B.Com.
SKILL ENHANCEMENT COURSE (SEC 5) Community Based Disaster Management

Programme: Under Graduate in Arts/Science	**Year: III**	**Semester: V**
Subject: Skill Enhancement	**Course Code:** DM..SEC-05	**Course Title: Community Based Disaster Management**

Course Outcomes

1. Identification of local hazards, vulnerabilities and capacities within the community.
2. Strengthening community organization and leadership for effective disaster management.
3. To Understand the significance of community participation in disaster management, especially disaster planning and disaster response
4. Develop ability to come out with measures of community-based disaster handling

Theory-(Credit-1)	**Distribution of marks according the University rule.**
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**

Unit	**Course Content**	Lectures
Unit 1	**A brief Revision of Semester - IV (Disaster Rehabilitation)**	03
	Definitions of CBDM; Concept of CBDM; Community and Community based Organizations; Principles, strategies and Challenges of CBDM; Traditional and Emerging approaches.	06
Unit 2	CBDM: Institutional Framework; Community Based Disaster Management Plan; Community Based Risk Assessment: Hazard, Vulnerability; Tools for Community Based Disaster Risk Assessment.	06
Practical (Credit-1)	**Course Title: Field Work Based Report** (15 to 20 Pages) • Field based survey (village nearby Campus/college): Community based effective mitigation measures for any risk in the area and Mapping of hazard-prone areas with local input on Google Images • Preparation of report with recommendation about the involvement of community in the disaster management. (It should not be copy/ cut and paste from the Internet or other sources)	30

Suggested Readings

1. "Development, Planning and Administration", 2003, Course Material for Commonwealth Executive Masters in Public Administration, Commonwealth of Learning, Vancouver.
2. "Social Capital as a Health Determinant: How is it Defined?" Health Canada, Applied Research and Analysis Directorate at, http://www.hc-sc.gc.ca/english/ index.html
3. Blackburn J. and J. Holland, 1998, Who Changes: Institutionalising Participation in Development, Intermediate Technology Publications, London.
4. Buckland, Jerry and M. Matiur Rahman, 1999, "Community-based Disaster Management during the 1997 Red River Flood in Canada", Disasters 23(2).
5. Cohen, J.M. and N.T. Uphoff, 1980, "Participation's Place in Rural Development: Seeking Clarity through Specificity," World Development, Vol. 8, No. 30.
6. GSDMA, 2005, "Plain Truth", Newsletter, Gujarat State Disaster Management Authority, Gujarat, India.
7. Hickey, Sam and Mohan Giles, 2003, "Relocating Participation within a radical politics of development: Citizenship and Critical Modernism", Draft working Paper prepared for Conference on Participation: From tyranny to transformation? Exploring new approaches to participation in development.
8. Info -change "Right to Information" at, http://www.infochangeindia.org/ changemakers.jsp
9. Jain, S., "Standing up for trees: Women's role in the Chipko Movement", at http://www.fao.org/docrep/r0465e/r0465e03.htm
10. Knack, Stephen and Phillip Keefer, 1997, Does Social Capital Have an Economic Payoff: A Cross-Country Investigation, The Quarterly Journal of Economics (4).
11. Kreuter, Marshall, Laura Young and Nicole Lezin, 1998, Measuring Social Capital in Small Communities, Study conducted by Health 2000 Inc., Atlanta, in cooperation with the St. Louis University School of Public Health.
12. McMillan D. and D.W.Chavis, 1986, "Sense of Community; definition and theory," Journal of Community Psychology, 14, 6-2.
13. Paul, S., 1987, "Community Participation in Development Projects: The World Bank Experience", Readings in Community Participation, World Bank, Washington.
14. Putnam, Robert, 2001-02, "Social Capital: Measurement and Consequences," Isuma Canadian Journal of Policy Research, online at http://www.isuma.net/ v02n01/index_e.shtml
15. Putnam, Robert, May 2000, "Social Capital: Wildfire of Research," The Ottawa Citizen.
16. Sagar, Alpana, 2004-05, "Health", Alternate Economic Survey, India, 2004-05, Daanish Books.
17. SEEDS, 2004, "Actahead II - Partnership in Community Based Disaster Management in Asia", Report based on proceedings of the international conference held in New Delhi, India, 24-26 August 2004", New Delhi, India.
18. UNDP Vietnam, 2005, "NDM Partnership: Partnership to Mitigate Natural Disasters in Central Vietnam", available at http://www.undp.org.vn/ndmpartnership/default.htm
19. World Health Organisation in Collaboration with the International League of Red Cross and Red Crescent Societies, 1989,coping with natural disasters: the role of local health personnel and the community, WHO, Geneva

DEPARTMENT OF GEOGRAPHY

B.A./B.Sc.

SKILL ENHANCEMENT COURSE (SEC 6) Disaster Management and Planning

Programme: Under Graduate in Arts/Science	**Year: III**	**Semester: VI**
Subject: Skill Enhancement	**Course Code:** DM..SEC-06	**Course Title: Disaster Management and Planning**

Course Outcomes

1. Developing emergency response plans.

Theory- (Credit-1)	**Distribution of marks according the University rule**.
Total No. of Lectures – Tutorials – Practical (in hours per week): 1-0-1	**15 hrs for 1 credit theory, 30 hrs for 1 credit practical**

Unit	**Course Content:** Disaster Planning	Lectures
Unit 1	Concept and components of Disaster Management Planning; Important phases of management planning, Short term and long-term Planning.	08
Unit 2	Role of National, International agencies in Disaster management Planning; Incident Command System.	07
Practical (Credit-1)	**Project Work** **Final Research project: Field survey based project report writing and project presentation.** A 20–25-page dissertation where the students are required to select the topic and area with the help of their respective teachers. Students are required to prepare a disaster management-based project report. Plan for any of the following: Village, School, Institution, Hospital, and Municipality. Hard copy of Report must be submitted to the Department one week before the commencement of the Theory Examinations. The Report will be evaluated in house. The evaluation and viva –voce examination will be conducted by internal examiners. (It should not be copy/ cut and paste from the Internet or other sources)	30

Note: In 6th semester the fresh entry (those who have not opted at least two previous semesters of this course) is not Allowed.

Suggested Readings

Carter, Nick W, 1991, Disaster Management: A Disaster Manager's Handbook, Asian Development Bank, Manila.