

Curriculum and courses of  
**Master of Disaster Management**  
**[Regular Batch]**  
for the session of 2016-2017; 2017-2018 and Onward



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# Syllabus

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## Master of Disaster Management (MDM)

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Institute of Disaster  
Management and Vulnerability  
Studies, Lecture Theater  
building (1<sup>st</sup> Floor)  
University of Dhaka

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**Introducing the Programme**

The Institute of Disaster Management and Vulnerability Studies (IDMVS) is offering Master of Disaster Management (MDM) for the students who accomplish the Bachelor of Disaster Management (BDM) from the institute. This curriculum is specially designed on advanced ideas of disaster issues and will be effective from the first batch (BDM regular) who have successfully accomplished their undergraduate courses and criterion.

The MDM programme covers a wide range of areas from multidisciplinary perspectives. The overall goal of the programme is to provide apprentices the opportunity to critically compare theory and conceptual approaches on the one hand and practice on the other, and to introduce and discuss their own experiences.

Some of the important courses include advanced theories to disaster management; disaster economics; urban disaster and risk management; strategic planning and humanitarian logistics management; climate change, and humanitarian crises management; advanced research methodology in disaster management; ecosystem based approaches; disaster recovery and planning and management; green technology and gender dimensions to disaster food security and biotechnology; disaster recovery; political economy of climate change and other relevant issues to disaster management.

The Masters Programme is designed to share higher level disaster related comprehensive knowledge to the students of MDM after completion of their Bachelor degree from the IDMVS, University of Dhaka. The main objective of the programme is to create a cadre of trained apprentices through developing skills and creative judgment for effective management of disaster related issues through a multidisciplinary approach. The degree to be awarded by the University of Dhaka has been named as MDM (Master of Disaster Management). The key features of MDM regular one (1) year course is depicted below:

**Salient Features of MDM Programme**

- Total 43 credit hours
- An Advanced Research Monograph [Selected on merit basis]
- Field visit/Internship
- English Medium of curriculum and instructions

**Course Structure of the MDM [regular] Degree Programme**

Semester	Distribution	Number of Courses	Total Marks	Earned Credits	
				Theoretical	Practical
First	Theoretical+ Practical	6	600	18	3
Second	Theoretical+ Practical	6	600	16	2
	Oral examination	1	100	4	-
<b>Total</b>			<b>1300</b>	<b>38</b>	<b>05</b>

The Master of Disaster Management (MDM) shall be four years duration and divided into 2 (two) semesters. Each semester shall be 19 weeks, of which

- 15 (fifteen) weeks for class teaching
- 1 (one) week break for preparation, and
- 3 (three) weeks for holding the semester final examinations

In the *Second Semester* the students are divided into thesis and Non-thesis group based on the performance of cumulative results of undergraduate programme (decided by the Academic Committee of the Institute). At least 10 per cent of the students out of total student of successfully completed undergraduate programme will have scope to conduct the advanced research dissertation. Each of the thesis students will conduct independent research on a specific problem; write a thesis and defense containing 4 credits. Students of Non-thesis group will have to choose any alternative courses (based on availability of expertise and faculty members) containing 4 credits. At the end of this level, all students shall have to appear at the comprehensive examination (both written and oral). Hour of lecture classes/contact hour per week are determined on the basis of the credit hours assigned to each course unit.

#### ❖ Evaluation and Grading

Evaluation and grading will be determined on the basis of an overall evaluation of student's performance in mid-semester examination, semester final examination, term paper(s)/home assignment(s), class attendance and active participation in the discussion class/tutorial class/group presentation/class test.

- Marks of each theoretical course will be divided as follows:

The distribution of marks for evaluation will be as under:

Class attendance	5%
Active participation in the discussion class/tutorial class/group presentation/class test	10%
Mid-semester examination (duration of 75 minutes)	20%
Term paper(s)/home assignment(s) and presentation	15%
Semester final examination (duration of 3 hours)	50%
<b>Total</b>	<b>100%</b>

- Number of each theoretical course related to practical will be divided as follows:

<b>Sessional (25%)</b>	
Class attendance	5%
Active participation in the discussion class/tutorial class/group presentation/class test	10%
Mid-semester examination (duration of 50 minutes)	10%
<b>Practical (25%)</b>	
Class attendance	5%
Practical work/Field Work	20%
Semester final examination (duration of 3 hours)	50%
<b>Total</b>	<b>100%</b>

**Marking of Class Attendance shall be computed in the following manners**

Attendance range (in percent)	Marks
90% and above	5.0
85% to less than 90%	4.5
80% to less than 85%	4.0
75% to less than 80%	3.5
70% to less than 75%	3.0
65% to less than 70%	2.5
60% to less than 65%	2.0
55% to less than 60%	1.5
50% to less than 55%	1.0
45% to less than 50%	0.5
Less than 45%	0.0

**❖ Grading Structure in a 4 – point Grading Scale:**

For each course, the average marks awarded by the semester final examiners, and the marks awarded by the course teacher for the mid-term examination, term paper(s)/home assignment(s), class attendance, practical work or field work and active participation in the discussion class/tutorial class group presentation/class test will be totaled and converted into letter-grades following a 4 – point grading scale presented below:

Mark Range (in percent)	Letter - Grade	Explanation	Grade Point
80% and above	A+	Excellent	4.00
75% to less than 80%	A		3.75
70% to less than 75%	A-		3.50
65% to less than 70%	B+	Very Good	3.25
60 to less than 65%	B		3.00
55% to less than 60%	B-		2.75
50% to less than 55%	C+	Good	2.50
45% to less than 50%	C		2.25
40% to less than 45%	D	Passing	2.00
Less than 40%	F	Failing	00
-----	I		Incomplete
-----	F		Withdrawn

### ❖ Interpretation of the Grades:

- 'A+', 'A' and 'A-' grades are indicative of 'excellent' performance overall by a student, earning grade points of 4.0, 3.75, and 3.50, respectively.

'B+', 'B' and 'B-' grades are indicative of 'very good' performance overall by a student, earning grade points of 3.25, 3.00 and 2.75, respectively.

- 'C+' and 'C' grades are indicative of 'satisfactory' performance overall by a student, earning grade points of 2.50, and 2.75, respectively.
- 'D' grade is indicative of minimally acceptable 'passing' performance overall by a student, earning a grade point of 2.00.
- 'F' grade is indicative of an unacceptable 'failing' performance overall by a student, i.e., fail to earn any credit point.
- 'I' grade is indicative of a situation where a student, for non-academic reasons beyond his control, is unable to complete the full requirements of the course for not being able to sit for the semester final examination. With the submission of valid and authenticated evidence of such reason(s), and the recommendation of the course teacher (to be reported to the Chairperson of the Examination Committee), that particular student will be allowed to complete the semester final examination with the next batch. Meanwhile, the student concerned will be promoted to the next semester. If an 'Incomplete' grade is not cleared with the next batch, the 'I' grade will automatically be changed to an 'F' grade. A maximum of two 'I' grades will be allowed to a student in one semester.
- 'W' grade will be awarded when a student is permitted to withdraw/drop a course/semester without penalty. Withdraws without penalties are not permitted after the mid-semester examination. A student may take readmission in the semester concerned with the next batch by paying the fees for the whole year.

### ❖ Class Attendance

The course teacher shall maintain the Class Attendance Register and submit it to the Director at the end of class. A student shall have to attend 75 per cent of the classes held in a course to be eligible to sit for the Semester Final Examination. However, students with attendance of 60 per cent to 74 per cent will be treated as non-collegiate, and below 60 per cent as non-collegiate students. The Director of the Centre shall monitor of classes being held and attendance of students.

❖ **Promotion**

- For promotion from one semester to the next, a student will require to earn a minimum SGPA (Semester Grade Point Average) of 2.0.
- For promotion from the second through the final semester, a student shall require to earn a minimum CGPA of 2.25, taking into consideration all the grade points earned in total number of courses of first through the final semester and improved grade, if any.
- A student failing to clear up the university dues of the year of study shall not be promoted to the next year class.

❖ **Improvement**

1. A student carrying F-grade in any course shall not be awarded the degree unless he/she improves it by appearing at the Semester Final Examination with the next batch. If the student gets F in the improvement examination, he/she will be automatically dropped from the semester student will have to take readmission with the next batch, provided the student concerned is eligible for readmission.
2. For improvement of grade in a course the student shall apply to the Director of the Institute at least 4 (four) weeks before the start of the Semester Final Examination.
3. If a student obtains a grade lower than 'B-' in a course, he/she will be allowed to repeat the term-final examination only once with the next batch for the purpose of grade improvement by forgoing his/her earlier term-final marks.
4. If a student obtains 'B-' or better grade in any course, he/she will not be allowed to repeat the course for the purpose of grade improvement.
5. Students earning C or D grade may also choose to improve the grade.
6. A student shall be allowed to improve the grade of a course only once.
7. A student earning F in more than two courses will be automatically dropped from the programme.
8. No improvement shall be allowed for the Mid-Semester Examination, term paper/ home assignment and active participation in the discussion class/tutorial/group presentation/class test marks and the grades earned in written and oral comprehensive examinations, as well as in course (s) in which a student did not attend classes or appear in the Semester Final Examination.
9. Absence in any course final examination will not be regarded as earned grade. A student must appear in the course final examination to have the eligibility for improvement
10. Improvement shall not be allowed once the degree is awarded.

❖ **Readmission:**

- A student failing to get the requisite grade points for promotion (clause 3.5) from one semester to the next may seek readmission with the following batch.
- For, readmission, a student will have to apply within one month after the announcement of result of the concerned semester.
- On readmission, grades earned earlier by a student in the class or readmission will cease to exist and the student will have to retake all the course works and examinations.
- A student will not be allowed readmission in more than two semesters during the entire programme.

❖ **Drop Out:**

A student failing to earn the GPA for promotion from one semester to the next after taking readmission in any semester will be dropped out of the program. A student earning 'F' grade in any course after taking improvement examinations or readmission in any semester class will be dropped out of the program.

❖ **Adopting of Unfair Means:**

If any student adopts unfair means in any examination or home assignment, the teacher/invigilator will report in writing to the Chairman of the Examination Committee/Chief Invigilator for onward transmission to the Disciplinary Board of the University for action as per University Rules.

## CURRICULUM PLAN

Semester wise courses and distribution of Marks and Credits are as follows:

### First Semester

Course Code	Course Title	Marks	Credit
DMC 5101	Advanced Theories to Disaster Studies	100	3
DMC 5102	Disaster and Climate Change: Adaptation, Mitigation and Resilience	100	3+1
DMC 5103	Disaster Economics	100	3
DMC 5104	Urban Disaster and Risk Management	100	3+1
DMC 5105	Strategic Planning and Humanitarian Logistics Management	100	3+1
DMC 5106	Climate Change, Conflict and Humanitarian Crisis Management	100	3
	Total	600	21

### Second Semester

#### Non Thesis Group

Course Code	Course Title	Marks	Credit
DMC 5207	Advanced Research Methodology in Disaster Management	100	3
DMC 5208	Ecosystem Based Approaches to Disaster Management	100	3+1
DMC 5209	Disaster Recovery Planning and Management	100	3+1
DMC 5210	Disaster, Food Security and Biotechnology	100	3
Any one from the followings			
DMC 5211	Disaster, Climate Change, Green Technology and Sustainability	100	4
DMC 5212	Political economy of Climate Change and Disaster	100	4
	Comprehensive and Viva voce (50+50)	100	4
	Total	600	22

#### Thesis Group

Course Code	Course Title	Marks	Credit
DMC-5207	Advanced Research Methodology in Disaster Management	100	3
DMC-5208	Ecosystem Approaches to Disaster Management	100	3+1
DMC-5209	Disaster Recovery Planning and Management	100	3+1
DMC-5210	Disaster, Food Security and Biotechnology	100	3
DMC-5213	Advanced Research Dissertation (Thesis + Oral examination)	75+25	3+1
	Comprehensive and Viva voce (50+50)	100	4
	Total	600	22



## Detailed Description of the Syllabus of Master of Disaster Management

### DMC 5101: Advanced Theories to Disaster Studies

**Course Objectives:** The course outlines the advanced theoretical issues of disaster studies. The course has been designed based on the following objectives: (1) to introduce the major theoretical ideas in relation to disaster, climate change, environment and nature from critical point of view; (ii) to focus the holistic domination nature of society and nature on basis of capitalism and its' donation; (iii) to understand risks behavior of society and politics of domination.

#### Course contents:

#### Chapter one: Imagination in Disaster Studies

1. Sociological imagination in disaster studies
2. Abstracted empiricism
3. Philosophies of science
4. Science beyond truth and enlightenment

#### Chapter Two: Paradigm in Disaster Studies

1. Development of paradigm: a comparison of disasters paradigm: the search for a holistic policy guide
2. Climate Change, Risk and Danger: skeptics and optimists; gee-gees
3. World-System Approach to Post-Catastrophe
4. Ethnography of a natural disaster simulation; a model of natural disaster administration: naming and framing theory and reality

#### Chapter Three: Capital and Domination

1. The culprit: The ecological crisis, capital and capitalism
2. The domination of Nature: on ecologies, capital and the domination of nature
3. The North as/and The other: ecology, domination, solidarity

#### Chapter Four: Paths to eco-socialism: An Introduction

1. A critique of existing eco-politics: Pre-figuration and Eco-socialism
2. Eco-managerialism: environmental studies as a power and knowledge formation

#### Chapter Four: The Politics of Disasters and Climate Change

1. The Politics of disasters
2. Managing Risks in a Climatically Dynamic Environment: Global Climate Hierarchy

3. The politics of climate change: Running Out and Running Down; The Geopolitics of Climate Change
4. The Politics of adaptation
5. International Negotiations , the EU and Carbon Markets

### **Chapter Six: Risk Society: Modernity and Postmodernity**

1. The Making and Unmaking Strangers: Dimensions of the present uncertainty; freedom, uncertainty and freedom from uncertainty; theorizing postmodern humanity.
2. Poststructuralism, Marxism and the Environment
3. The Politics of Knowledge, Globalization and Risk Society
4. Terrorism and Risk Society: Beck's Approach to Terrorism, Critique of Beck, The Political Spin on Terrorism; Debunking the 'Radicalization'

### **Chapter Seven: System and Social system**

1. Functionalism: Structural Functionalism, Neo-Functionalism
2. System Theory
3. Symbolic Interactionism
4. Network theory
5. Structuration Theory: The Critique of "Scientific" Social theory; The Theory of Structuration

### **References**

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Kovel, Joel(2007) *The Enemy of Nature: The end of Capitalism or the End of the World?*. Zed Books: New York.

Letukas, L. and Barnshaw, J. (2008) A World-System Approach to Post-Catastrophe International Relief. *Social Forces*, Vol. 87, No. 2 (Dec., 2008), pp. 1063-1087. Oxford University Press.

McEntire, David A. et. al. (2002) "A Comparison of Disaster Paradigms: The Search for a Holistic Policy". *Public Administration Review*. Vol. 62, No. 3 (May - Jun., 2002), pp. 267-281.

Mills. C. W. (1959) *The Sociological Imagination*. Oxford University Press. New York.

Revent S. A small world?: ethnography of a natural disaster simulation in Lima, Peru  
Ritzer, G. (2000) *Modern Sociological Theory*. McGraw Hill. Boston.

Turner, J. H. (2003) *The Structure of Sociological Theory*. Thomson & Wadsworth: Belmont

## **DMC 5102: Disaster and Climate Change: Adaptation, Mitigation and Resilience**

**Course objectives:** This salient course is tailored primarily to address varying issues of disaster and climate change resilience processes from social, more specifically multidisciplinary perspectives which are believed to be a vital focus in the study of holistic disaster management.

### **Chapter one: Understanding DRR and CCA**

1. Understanding the concepts: Disaster and climate change risk; resilience, types of resilience; resilience to natural hazards; the national imperative to increase resilience
2. Integrated approach: Constructing an integrated approach to disaster risk reduction and climate change adaptation; principles of an integrated approach to disaster risk reduction and climate change adaptation
3. Resilience and Build-Back-Better in the context of Sendai Framework; Build-Back-Better and Disaster Resilience.

### **Chapter Two: Measuring Progress toward Adaptation and Resilience**

1. The Need for Matrices and Indicators; Baseline Resilience Indicator for Communities
2. Measurement and prediction of climate change: Instrumental observations, satellite measurements, historical records, proxy measurements, dating, isotope age dating etc.; natural variability, predicting global warming etc.
3. Measuring Indices: Coastal Resilience Index; Social Vulnerability Index (SoVI®); Community Assessment of Resilience Tool (CART); Resilience Capacity Index (RCI); Community Disaster Resilience Index (CDRI)

### **Chapter Three: Resilience and adaptation in the built environment**

1. Program cycle management for disaster risk reduction and climate change adaptation
2. Post disaster resilience: Capacity Development for post-disaster reconstruction of the built environment; project management of disaster reconstruction, sustainable post-disaster waste management: construction and demolition of debris
3. Post-disaster low-cost housing solutions: learning from the poor; Appropriate technology for post-disaster reconstruction

### **Chapter-Four: Key Issues of DRR and CCA**

1. Adaptations to climate change: necessity for adaptation, conceptualizing adaptation, criteria for assessing responses, adaptation mechanism, methods of adaptation, local level livelihood adaptation options examples etc.
2. Key sectors for disaster risk reduction and climate change adaptation: Food security, Livelihoods, Natural resource management, Water, sanitation and hygiene (WASH), Education

3. Resilience, adaptation and adaptive capacity in the public health context
4. Evolving DRR Challenges; Globalization and cascading risk;

### **Chapter -Five: Ontology: Ecological Resilience, Philosophy and Urban Morphology**

1. Ecological resilience: Ecological resilience and socio-ecological systems; application of ecological resilience
2. From socio-ecological systems to socio-ecological landscapes; the resilience of urban landscapes
3. All Hazards and Cross-Cultural Perspectives: Issues in developing resilience; operationalizing resilience and its predictors; developing a resilience model; assessing cross-cultural validity of the model; predicting resilience to a hazard event; culturally specific influences on resilience.

### **Chapter Seven: Sustainable Development, Adaptation and Resilience**

1. Sustainable development: the Clean Development Mechanism; Risk management in the Clean Development Mechanism (CDM)
2. Opportunities and Challenges for Disaster and Climate Resilience
3. From science to policy: developing responses to climate change

### **Chapter-Eight: Public Private Collaboration for Resilience and Adaptation**

1. Public-Private Collaboration and Partnership for CCA and DRR  
The Private – Public Partnership Perspective and nature of Collaboration.
2. Community and Disaster Resilience: The Collaborative Approach; Collaborations for Resilience;
3. Risk, Resilience and Accountability in DRR and CCA under PPP

**Case Studies:** The students need to assess the changing climate evidences such as flooding, cyclones, weather variability etc., and its consequences, mitigation and adaptation through integrating disaster risk reduction and climate change adaptation into development planning.

### **References**

Amaratunga, D. and Haigh, R. (2011). Post-disaster reconstruction of the built environment: rebuilding for resilience. Blackwell Publishing Ltd

Burroughs, W.J. (2001) Climate Change: A multidisciplinary approach: Cambridge University Press.

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- UN ESCAP (2015) Resilient Business for Resilient Nations and Communities. UNESCAP: Bangkok.

## **DMC 5103: Disaster Economics**

This course is intended to understand the economic aspects of hazards, disasters, risks, vulnerability, response and management, which is crucial for undertaking analysis, policy formulation, designing strategies, initiating and implementing programmes at macro, meso and micro levels. It covers to examine the effects and costs involved in disaster management at different levels. The students will understand the tools and techniques to analyze the impacts and risks of disaster, and risk management. The course will encompass disaster planning, budgeting, fiscal implications, and different insurance schemes for analyzing risks and risk management mechanisms. Some practical implications and case studies will also be supportive the theoretical concept.

### **Course contents:**

#### **Chapter one: Introduction**

- Macro Economics, demand and supply, consumption, savings, investment, national income, budget, economic growth and development, poverty and inequality, market and social protection, risk and uncertainty, insurance.

#### **Chapter two: Economics of disasters**

- Disaster Economics, features and scopes of disaster economics, Economic analysis as applied to disasters, Optimal planning, Incentive structure, Broken window fallacy, natural and unnatural disasters, production possibilities frontier, primary and secondary effects, indirect effects, cost-benefit analysis of disaster risk reduction steps and mechanisms, assessing risk-vulnerability chain, ex ante and ex post measures.

#### **Chapter Three: Effects and Costs**

- Individual and covariate shocks; measuring disaster losses and costs like tangible costs – physical destruction; intangible costs – health and psychological costs, cost related to household disruption, loss of memorabilia; national, regional, local and global costs; cost of migration – internal and external, stimulus and productivity effects; Estimating Economic Costs of Disasters.

#### **Chapter four: Index and indicators**

- Indicators for measuring economic vulnerability, integrated vulnerability index, disaster risk index, prevalent vulnerability index, risk management index, disaster deficit index, local disaster index.

#### **Chapter five: Economic analysis**

- Impact assessment of alternative resilience and adaptation investments, resiliency investment equilibrium; approaching human vulnerability - parametric model, Kawasumi equation – earthquakes, flood and cyclone, drought and salinity, multiple risk and categories, market analysis.

### **Chapter Six: Disaster and Economic planning**

- Disaster planning; fiscal policy – overview of tax measures, resource allocation, disaster risk reduction, financing climate change adaptation, reconstruction and public investment, challenges of policy making.

### **Chapter Seven: Finance in disaster management:**

- The traditional route, Debt Swaps, Blocked funds, Triangular food aid, Trust funds, Disaster insurance, Revolving funds, Central bank assistance, roles of public and private sector in disaster management, foreign disaster assistance, investment, economic benefits of disaster risk reduction, costs of disaster risk reduction activities, challenges of making economic assessments.

### **Chapter Eight: Alternative disaster scenarios:**

- Disasters caused by economic mismanagement, disasters involving displaced populations and refugees, disasters leading to food security, disasters involving environmental challenges.

### **Chapter Nine: Disaster and Political Economy**

- The nexus between political economy, climate change and natural disasters; the political economy of disaster fund and relief goods and materials.

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Pearson, C. S. (2000). *Economics and Global Environments*. New York: Cambridge University Press.



## **DMC 5104: Urban Disaster and Risk Management**

**Objective:** The objective of this course is to build knowledge and professional capacities for reducing disaster risks in urban areas and contributing to better and more targeted management issues following disasters. The specific objectives of the courses are: (i) to increase the knowledge and understanding of the disaster phenomenon in urban areas, its different contextual aspects, impacts and socio-economics consequences; (ii) to increase the knowledge and understanding of the strategy for disaster management and to increase skills and abilities for implementing the Urban Disaster Risk Reduction (DRR) Strategy; (iii) To ensure abilities to assess risk of urban disasters and to deliver response to minimize these risk; (iv) to ensure ability to design, implement and evaluate study on disaster

### **Course Contents:**

#### **Chapter one: Introduction**

- Introduction to Urban Disasters: Needs for studying Urban Disaster and Risk Management, Challenges in Managing Urban Disasters, Disasters of Different Mega Cities of Third World

#### **Chapter two: Risk Assessment and Approaches**

- Urban Risk Assessment, Integrated Approach to Assessing Urban Risk, Challenges in undertaking the Assessing Urban Risk, Climate Risk in Urban Areas, Climate Change and Cities

#### **Chapter Three: Drivers of urban settlement**

- Issues and drivers of urban settlement, brief description of Urban Centre, Urban Growth, Urban Economy, Urban Poverty, Urban Population, Road Network and Connectivity, Water Ways, Urban Transport, Infrastructural Development, Water Supply, Sewerage System and Related Disasters

#### **Chapter Four: Urban risks**

- Earth Quake, Land Slide, Fire, and Reduction of its Risks in Urban Areas

#### **Chapter Five: Hydro-meteorological Impact**

- Hydro-meteorological Impact (Extreme Rainfall, Urban flood, Snowfall, Water Logging, Tornado, Hit Wave, Cold Wave, Cyclone, etc) and Reduction of its Risks in Urban areas

#### **Chapter six: Road Accident**

- Road Accident, Traffic Congestion, Mass Convene in the Public Places and Reduction of its hazard Risks

#### **Chapter seven: Public health related hazards**

- Public Health Related hazard like Epidemic, Water Supply Disruption, Sewerage System failure, etc. in Urban Areas and its Risk Reduction

### **References**

1. Eric Dickson, Judy L. Baker, Daniel Hoornweg, and Asmita Tiwari (2012) Urban Risk Assessment, Understanding Disaster and Climate Risk in Cities, 2012, The World Bank, Washington DC
2. UN-HABITAT ( 2007) Enhancing Urban Safety and Security: Global Report on Human Settlements 2007. London: Earthscan
3. WMO/GWP (2008) Urban flood Risk Management, a tool for integrated flood management, Associated Programme on Flood Management, World Meteorological Organization.

## **DMC 5105: Strategic Planning and Humanitarian Logistics Management**

**Course Objectives:** The prime aim of the study is to provide an idea about logistics management during and post disaster period of disasters. The students would be able to make a better understanding of the activities involved in logistics during and post emergency situation. The objective of the course is to develop a clear understating on humanitarian logistics management through practical and handwriting trainings.

### **Chapter one: Introduction to Logistics**

- Introduction: Concepts and development: Defining the concepts of logistics, nature of logistics, review its history, Importance of logistics, Various elements of a logistics system: warehousing choices and physical distribution; Logistics Planning in Natural Disasters: Formulating Logistic strategy, Strategic View of Supply Chain Management; Mapping Supply Chain Management; Formulating Logistic Strategy; Implementation of Supply Chain Management.

### **Chapter Two: Humanitarian Logistics Strategies**

- Relief Network Model for Efficient Disaster Management and Disaster Recovery; Humanitarian Logistics Modeling; An Approach of Modeling for Humanitarian Supplies; Business Modeling for the Sustainability of Humanitarian Projects; An Agile and Flexible Supply Chain for Efficient Humanitarian Logistics in a Disaster Management System

### **Chapter Three: Overview and objectives of the Government and Municipal Logistics Systems**

- Supply chain management process of government, basic structure of government and its strategic planning and budgeting processes, the regulatory framework, procurement regime of government, Procurement methodologies. Humanitarian Aid Logistics; Strategic Partners and Strange Bedfellows: Relationship Building in the Relief Supply Chain

### **Chapter Four- Inventory Management**

- Introduction to the concept of inventory management, the role and importance of inventory management, the impact of demand on inventory management, the functional classification of inventories, measuring the effectiveness of inventory management, and systems to improve materials flow.

### **Chapter Five: Warehousing and Material Handling**

- Introduction to the concept of warehouse management, sizing the warehouse, operations and warehouse management systems, errors in operation, stock management, types of warehouses and facilities, and the challenge of managing continuous change and safety in operation, equipment used in facilities with reference to the selection and purchase of equipment, different types of storage methods and handling systems.

## Chapter Six: Transportation Operation Management

- Introduction to the concept of transport management, strategic transport management, tactical transport strategies, and principles of efficient operational transport, transport costs and pricing principles, competition within modes of transport, cost structure of the different modes of transport, cost tradeoffs in transport, profit planning and control, and tariff quoting.

## Chapter Seven: Logistics and Supply Chain for Disaster Management

- Introduction to supply chain and logistics management, Current supply chain strategies, Customer service and logistics, Channels of distribution, process for developing a supply chain strategy given the corporate goals. Identification and Modelling of Critical Success Factors of a Humanitarian Supply Chain; Supply Chain for Disaster Management

## Chapter Eight: Disaster Relief Operations

- Emergency relief operations, resource requirements, role of different service groups, humanitarian logistics in disaster relief operation, procurement policies in disaster relief, Relief-Chain Logistics in Natural Disasters; Relief Supply Chain Planning.

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## **DMC 5106: Climate Change, Conflict and Humanitarian Crisis Management**

Course objectives: The course has been outlined considering the significance of supply chain and strategic management in disaster risk reduction. The major objectives of this course are: (i) to define key terms and introduce conceptual frameworks relating to the humanitarian and relief response logistics; (ii) to explore the differences between business logistics and disaster/emergency/relief logistics; (iii) to examine the objectives of disaster management, relief logistics and community supply chains and ways of measuring performance; (iv) to outline the process of disaster / emergency / relief response and the impact on those affected by these events; (v) to examine in strategic, tactical and operational decisions relating to response and relief work.

### **Chapter One: Introduction**

1. Concept of crisis; types of crisis; crisis life cycle; crisis severity; commencement of a crisis. Conflict: violent and non-violent conflicts, sources of conflict; types of conflict: ethnic conflict, clash of civilization and environmental conflict, structural and cultural violence
2. Conceptual and theoretical considerations for conflict-sensitive climate change adaptation

### **Chapter Two: Crises and conflicts: a conceptual framework**

1. Climate Change and Conflict Nexus: Framework for Policy-oriented Action; understanding conflict: Theoretical Construction; environmental conflict and environmental security: Theories and Issues
2. Exploring the links between climate, conflict and politics: Politics and climate change mitigation;
3. Conflict Resolution Studies, Conflict Mapping : Tools and Techniques

### **Chapter – Three: Crisis Management**

1. Crisis management: Planning, response, selection and training, crisis management and public relations, operational reality
2. Climate Change and Conflict Handling Mechanism: Force, Adjudication, Arbitration, Negotiation, Mediation, Reconciliation and Dialogue
3. Climate Change Conflict Management to Conflict Transformation, Citizen's Diplomacy

### **Chapter - Four: Climate Change and Crisis Information Management**

1. Nexus between climate change and crisis information management
2. Climate change and Information Management Cycle, Building Information Networks
3. Climate Change and Conflict Mapping; Integrating New Information Technology & Social Media
4. Climate Change and Information Analysis; Source Evaluation; Information Protection; Information Dissemination

## **Chapter Five: Climate Change Conflict, Post Conflict and Post-Conflict Reconstruction:**

1. Resource Scarcity, Climate Change and the Risk of Violent Conflict
2. Contemporary International Conflicts: Rwanda ; Afghanistan; Kosovo; Libya, Syria
3. Conflict, Post Conflict and Post-Conflict Reconstruction: Exploring the Associated Challenges Conflicts. Conflict circle, Post conflict, Post-conflict reconstruction

## **Chapter- Six: Climate Change, Gender, Conflict and Development**

1. Understanding Climate Nexus, and Gender through Conflict Analysis Lenses
2. Impact of Armed Conflict and Political Violence on Climate and Women
3. Role of Women in Conflict Prevention in the context of Climate Change

## **Chapter Seven: Climate change, crisis management and international organizations**

1. Strategy in the Contemporary World and Crisis Decision-making in the context of climate change.
2. Climate change and identifying Conflict Prevention Measures: Comparing Two Approaches
3. Climate Change, Conflict, Early Warning and Response Mechanisms : Tools For Enhancing the Effectiveness of Regional Organizations, Diplomatic Negotiation.

## **Chapter Eight: Role of UN in Conflict Resolution in the context of Climate Change**

1. Agenda for Peace, Responsibility to Protect (R2P) and Beyond
2. Conflict Prevention, Peacemaking, Peace keeping, Peace building
3. Role of Multinational Organization in Peace building (ASIAN, SAARC, NATO, ECOWAS, AU, etc)
4. Human Rights Humanitarian Intervention: An opportunity for making adaptation conflict-sensitive

## **Case studies:**

Engaging the corporate sector in climate-sensitive peace building in Africa; Livelihood security: Climate change, migration and conflict in the Sahel

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## **DMC 5207: Advanced Research Methodology in Disaster Management**

**Course Objectives:** This course pinpoints penetratingly on the methodologies conducive for disaster research as a proper methodology lies in the heart of any academic research. Opting for apposite methods is the foremost job a researcher needs to conceptualize and a profound learning of methodological issues plays pivotally here. The content of the course aims at harnessing the students' academic acumen for doing practical researches in various fields of disasters. Understanding research from a multidisciplinary perspective, the sampling techniques, data analyses with classical and contemporary techniques, interpreting data for a more pertinent conclusion is discussed. Both qualitative and quantitative research methodologies are enunciated with a view to providing knowledge about disaster research with the help of them.

### **Course Contents:**

#### **Chapter one: Logic and Methodology**

- Inductive and deductive logic, Theoretical congruity of a theory, Different analytical frameworks, Various matrices, Positivist, Interpretative and Critical schools, Relationships between theory and research, Different types of theories (formal and substantive), Postmodernism, poststructuralism and feminism.

#### **Chapter two: Research Question and Hypothesis**

- Qualitative Research Questions: A qualitative central question from an ethnography, a qualitative central question from a case study. Quantitative Research Questions: null hypothesis, directional and nondirectional hypothesis, standard use of language in hypothesis. Mixed Methods Research Questions and Hypothesis.

#### **Chapter three: Data Collection Tools**

- Survey questionnaire, Structured, Semi-structured and non-structured questionnaire, Checklist for KII, FGD and Case study.

#### **Chapter four: Mixed Methods Procedures**

- Components of Mixed Methods Procedures; The Nature of Mixed Methods Research; Types of Mixed Methods Strategies and Visual Models; Planning Mixed Methods Procedures: Timing, Weighting, Mixing, Theorizing or Transforming Perspectives; Alternative Strategies and Visual Models: Sequential Explanatory Strategy, Sequential Exploratory Strategy, Sequential Transformative Strategy, Concurrent Triangulation Strategy, Concurrent Embedded Strategy, Concurrent Transformative Strategy; Choosing a Mixed Methods Strategy, Data Collection Procedures, Data Analysis and Validation Procedures, Report Presentation Structure.

#### **Chapter five: Proposal Development**

- Why proposal writing - Different types of Proposal Writing, Structure of different proposal.

## **Chapter six: Qualitative Data Analysis and Software Application**

- Basic concepts - techniques and approaches of qualitative analysis - Logical Framework Approach, Gender Analysis - In-Depth Interviews – Focus Group – Unobtrusive Methods – Narrative Analysis and Life History – Memory-Work – Ethnography – Case study– Phenomenology– Participatory Action Research, Data Management and Analysis Method – Software: INFO and Qualitative Research – Analyzing Talk and Text – Applied Ethnography.

## **Chapter seven: Thesis and Report Writing**

- Organizing a Thesis – thesis writing: Introduction, Literature review, methodology, result and discussion, and conclusion writing, Referencing. Organizing a report - report writing.

## **Chapter eight: Scientific paper writing**

- Organizing a scientific paper - scientific paper writing. Journal selection, Impact factor of journals. Basic techniques of scientific paper writing: abstract or summary, introduction, methodology, result, discussion, acknowledgements, references and notes writings for scientific paper; figures and figure legends, Tables contraction, Submission of your paper.

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## **DMC-5208: Ecosystem Based Approaches to Disaster Management**

**Course Objectives:** The learning objective of the course is to understand the main components and drivers of disaster risk and how to assess these risks in terms of ecosystem-based services. The aim of the course is also to teach the students about the role of ecosystem in disaster risk reduction i.e., Eco-DRR, following different methods and tools. The students will be familiar with how to use various ecosystem management tools and approaches for reducing disaster risk in different ecosystems and hazard types. In addition, this course will provide a clear overview about the mainstreaming process of Eco-DRR and the opportunities and challenges in mainstreaming Eco-DRR in development context.

### **Chapter one: Introduction to Eco-DRR**

- 1.1. **Concepts of Disaster and Disaster Risk:** How is disaster different from hazard?; understanding the disaster risk equation and drivers of disaster risk; risk trends and DRR in the Asia-Pacific region; understanding linkages between the environment, disasters and development.
- 1.2. **Concepts of Eco-DRR:** Types of ecosystems, ecosystem services and relevance to DRR; paradigm shift towards integration of ecosystems and DRR; why do ecosystems matter in DRR?.

### **Chapter two: Spatial planning and Approaches to Eco-DRR and EbA**

- 2.1 **Approaches:** Integrated Coastal Zone Management (ICZM), Integrated Water Resource Management (IWRM); Integrated Watershed Management, Protected Area Management (PAM), Integrated Fire Management (IFM), Ecosystem-based Adaptation (EbA): Implementation of Eco-DRR and EBA through Community-based Adaptation (CBA) approaches; Community-based Natural Resource and Risk Management (CBNRRM). Practical work: Eco-DRR Mapping.
- 2.2 **Spatial Planning Tools and Approaches for DRR:** The concept of spatial planning for DRR; tools for spatial planning and DRR, strategic environmental assessments for DRR, Integrating risk and ecosystems into spatial planning, EIA, SIA and DRR.

### **Chapter three: Linking Disasters, Climate Change and Ecosystems**

- 3.1 **Key concepts:** Natural systems, Ecosystems and landscape systems, Ridge to Reef (R2R) concept, Millennium Ecosystem Assessment, linking ecosystems and humans to disasters: Biodiversity loss and DRR, global water crisis and DRR, water crisis and DRR, Desertification and Eco-DRR; Understanding similarities and differences between DRR and CCA; Linking Ecosystems, Disaster Risk Reduction and Climate Change Adaptation.
- 3.2 **Ecosystem and Challenges:** Principles and challenges of Eco-DRR and EbA; impacts of climate change on disasters, vulnerability and ecosystems; links between disasters, disaster risk reduction, adaptation and key international actors.

## **Chapter four: Investing in Coastal Resilience and Ecosystems Services for Risk Reduction**

- 4.1 Managing resilience and transformation: Defining resilience: Approaches to resilience; Resilience Analysis Protocol (RAP) and steps of strategies; Resilience of human and natural communities to coastal hazards.
- 4.2 Resilience and Coastal Ecosystems: Coastal Ecosystems and Disaster Risk Reduction; Bio-shields: Mangrove ecosystems as resilient natural defense; the role of ecosystems in Disaster Risk and Vulnerability Assessment: Use of RiVAMP. **Practical work on Investing in Coastal Resilience.**

## **Chapter five: Water Resources Management and Eco-DRR**

- 5.1 Flood and Resilience: good flood and bad flood: mainstreaming dynamic river basins for community resilience; integration of water resources management approaches to support DRR.
- 5.2 Sustainable Water Supply and Sanitation: The role of Eco-DRR; sustainable land management (SLM); Sustainable land and water management tools for Eco-DRR and sanitation management.

## **Chapter six: Ecological Engineering for DRR**

**Risk Assessment and Ecosystems:** Cost –benefit analysis; ecological engineering for disaster risk reduction and climate change adaptation; types of instruments and approaches; natural versus physical infrastructure for DRR; hybrid solutions to combining natural vs. physical engineering.

## **Chapter seven: Ecosystems for Urban Risk Reduction and Economics of DRR**

Basic principles of managing ecosystems for urban risk reduction; urban ecosystem dynamics for DRR; ecosystem applications to reduce urban risks; the role of protected areas in mitigating natural disasters in urban environment.

## **Chapter eight: Mainstreaming Eco-DRR and Policy Issues**

Policy Issues and Eco-DRR: Opportunities, Challenges and future perspectives for ecosystem-based disaster risk reduction.

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## **DMC 5209: Disaster Recovery Planning and Management**

**Course Objectives:** This course is designed to develop knowledge in the area of disaster recovery, planning and management. The course would be able to make the students understand on theoretical approaches to recovery and its practical implications. The course will also provide significant practical planning knowledge on process of post disaster recovery.

### **Course contents:**

#### **Chapter one: Introduction to Recovery**

- Definition, objectives, principles, factors of successful recovery, phases of disaster recovery, risk reduction in recovery phase, elements of recovery process, approach for strengthening recovery systems.

#### **Chapter two: Disaster Recovery Framework**

- Theoretical framework: system theory, sociopolitical-ecology theory, feminist theory: liberal feminism, multiracial feminism, feminist political ecology; emergent-norm theory;

#### **Chapter Three: Disaster Recovery Approaches**

- Recovery Needs Assessment; Damage assessment; community consideration, community focused recovery, rural area recovery needs, high density urban area recovery needs.

#### **Chapter Four: Disaster Recovery Planning**

- Principles of planning, planning as a process; pre and post disaster recovery planning and elements; recovery planning: short term recovery planning; emergency measures, preplanned ordinances, gathering resources for long term recovery; long term recovery planning: housing business, environmental resources, historic and cultural resources, infrastructure, social and psychological recovery, public sector recovery.

#### **Chapter Five: Disaster Recovery Management**

- Principles of disaster recovery management, disaster recovery coordination and communication, the economics of disaster, risk management, loss estimation, insurance, hazard mitigation and land use planning, housing repair & reconstruction, repopulation dynamics, community development: recovery programmes of Bangladesh: infrastructure and capital projects reconstruction and finance.

## References

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## **DMC 5210: Disaster, Food Security and Biotechnology**

With the human Population expected to exceed 2,00 million by 2050, how Bangladesh will met increasing demand for food in a sustainable way? Historically frequent floods, river erosion, drought, cyclone, tidal surge and tornado have devastated the agricultural crop production, rice especially paddy in Bangladesh. Moreover, rapid increases in yield have been a result of advances in some technologies like genetic improvement, use of synthetic pesticides and fertilizers and expanded irrigation, however has limitations and has led to significant decline of soil fertility, fall the level of underground water, environmental degradation, loss of ecology, biodiversity and eco-systems. Therefore, there is an urgent need for new approaches to food productions without destroying environment. This interdisciplinary course will examine the pros and cons of divergent biotechnological approaches to meeting the growing demand of food using crops grown by applying genetically modified genes and applying the most innovative but sustainable biotechnological tools, techniques, methods, technologies and approaches.

### **Course:**

1. Basic Concept of disaster, food security and biotechnology and their nature of interrelationship.
2. Explore interdisciplinary solutions to complex problem of growing population, food insecurity and development of biotechnological and scientific knowhow for solving these problems as an alternative means.
3. Role of transgenic crops and livestock in meeting the food insecurity of growing human population of Bangladesh and other developing countries.
4. The context of social, political and ethical concern of using biotechnology and genetically modified species; The political economy of biotechnology in food production.
5. Indentify the role and application of various alternative bio-technological techniques, methods and approaches in sustaining food securities-local, regional and global.
6. Role of germ-plasma banks for sustainable food and animal production; the role of artificial insemination in sustainable growth of animal production; developing dairy, poultry and fisheries by using biotechnological advancement.
7. Developing cheap media for growing crops from plants cell and or tissue culture

8. Develop appropriate technology for growing, preserving, storing and marketing of food grains, cereals, livestock, vegetables, fisheries and fruits; marketing mechanism of such products.
9. Role of microorganism structure of bacteria and viruses, bacterial growth and factors in preserving animals, crops and vegetables.

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## **DMC 5211: Disaster, Climate Change, Green Technology and Sustainability**

**Course Objectives:** The principal objective of the course is to offer an interdisciplinary perspective to the whole process of climate change, its overarching impacts on humans and environment, and as mitigation and adaptation techniques introducing through green technologies. The students are expected to be exposed to the methodological holistic approaches devised out of relevant theories, knowledge and scholarship interwined with wide horizon of information, practical skills, functional knowhow and competencies.

Understanding and recognizing critically the existing politics in climate change, technology transfer, technology divide and development between the East and the West are focused in a lucid way to better illustrate a synergy of green development. After completing the course the students would be able to learn how to potentially sharpen their acuity and acumen for discovering the feasible solutions invoking sustainable green technologies to address climate induced hazards and disasters.

### **Course Contents:**

#### **Chapter one: Dynamics of Climate Change**

- 1.1 Concept and Issues of Green Technology, Innovation, Diffusion and Climate Change
- 1.2 Industrial, Post-industrial, Postmodern, Information and Smart Age
- 1.3 UN, COP, UNFCCC, UNEP, IPCC, GCF and Climate Change
- 1.4 South Asia and Climate Change
- 1.5 Carbon politics
- 1.6 Sustainability, Climate Change and Disaster Management

#### **Chapter two: Clean and Green Technology**

- 2.1 Holistic Concepts of Green: Earth, Environment and Society
- 2.2 Paradigm Shift of Technology: Jacques Ellul, Thomas Kuhn and Jean Francois Lyotard
- 2.3 Green Technology in Sustainable Agriculture and Food Security
- 2.4 Policy and Management of Green Technology
- 2.5 Technological Dependency and Technology transfer
- 2.6 Politics of Technology

#### **Chapter three: Green Technology, Innovation and Inclusion**

- 3.1 Green Technology Policy and Management
- 3.2 Green transportation and Low carbon vehicles
- 3.3 Technology for DRR, Geo-information, Satellite and Meteorological Technology
- 3.4 Traditional, Alternative and Indigenous Technology
- 3.5 Sendai Framework and Green Technology<sup>7</sup>



## **Chapter Four: Green Technology, Green Infrastructure**

- 4.1 Sustainable Design and Construction
- 4.2 Infrastructure, Urban Landscape and Green Buildings
- 4.3 Concepts of Smart Building and Smart City
- 4.4 Recyclability and Alternative Resources

## **Chapter Five: Green Technology and Green Energy**

- 5.1 Renewable green energy and environment
- 5.2 Solar (photovoltaic) Energy
- 5.3 Wind Energy
- 5.4 Low Carbon Technology
- 5.5 Green nanotechnology

## **Chapter six: Green Development and Sustainability**

- 6.1 Sustainability, Green Development and Bangladesh

## **Chapter seven: Practical**

- 7.1 Industry-corporate interaction
- 7.2 Skill Development

## **References**

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## **DMC 5212: Political Economy of Climate Change and Disaster**

### **Course objectives:**

The aim of objective is to orient the students with political economy of climate change and disaster from multidisciplinary point of views. The course contests have been prepared to focus on the major concepts and approaches of political economy in climate change and disaster studies. The course will also address economic dimension of climate change adaptation and its' tools and matrices those are used for assessing climate change impacts. The interrelation of political economy of climate change, disaster and development will also be discussed from critical aspects.

### **Course contents:**

#### **Chapter one: Introduction**

1. Concept of political economy; the nexus of political economy and climate change
2. Science and climate politics; empirical political science
3. The new order of political economy of climate change and its challenges to combat climate change
4. The ethical consideration of politics of climate change.

#### **Chapter Two: Approaches to Political Economy of Climate change**

1. Economic doctrines in politics of climate change
2. Approaches: Marxist and Neo Marxists; Neoclassical Economics, Liberal Neoclassical Approach to Climate Change, Keynesian Economics, Neo-Keynesian Economics on Climate Change, Innovation Economics.
3. Environmentalism and its critics on climate change
4. Climate capitalism and ecological modernization; socialism and other alternatives to climate capitalism

#### **Chapter Three: Economics of Climate Change**

1. The Climate Casino: risk, uncertainty, and economics in a warming world
2. Economic growth and climate change
3. Economics of change: A framework for 'better growth' and a 'better climate'; policies to tackle market failures and strong institutions; tackling barriers and resistance to change

#### **Chapter Four: Tools and Techniques**

1. Analytical toolkit for understanding Climate Change
2. Metrics of the Challenge, Setting the Agenda: Stabilizing of Climate International Approaches: China, India, Europe , LCDs

#### **Chapter Five: Economy of Adaptation and Mitigation**

1. Least Developed countries and adaptation policies
2. The political economy of climate adaptation
3. Political economy aspects of climate change mitigation efforts: carbon tax, Carbon Credit Trading System (CCTS), Carbon tariffs and border tax adjustment; policies to reduce finance costs for low-carbon energy
4. Geo-Engineering: our way out of crisis.

## **Chapter-Six: Political Economy of Climate Change and Development**

1. Innovation: Transformative innovation toward a low-carbon economy; the potential for a 'circular economy'; making buildings and materials more sustainable; promoting innovation to support a low-carbon transition
2. Bamboo Thumping Bandits: The political economy of climate change adaptation in Bangladesh

## **Chapter Seven: Climate as a Global Negotiation**

1. Climate Change as a Global Negotiation: the theory of international climate policy
2. Governance of Climate Change and globalization
3. The development of International Climate Negotiations
4. The Economics of Innovation: Challenges and Opportunities.

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### **DMC 5213: Advanced Research Dissertation**

This dissertation is compulsory in Final Semester of MSS programme for the students of this group. Field visits to be conducted in examining and assessing the impacts of climate change and disaster on environment, population, economy, infrastructure, resources, agricultural crops, animal and biodiversity, gender and other relevant fields. The students need to present their research proposals, study findings through reports and class seminars. The supervisors will monitor the field study and provide overall guidance in writing the thesis whereas the evaluation of the dissertation will be done by internal and external examiner (s) or supervisor (s). Each student has to conduct an independent research dissertation (on the basis of field data collection). Out of 4 (four) credit 3 credit will be earmarked against research dissertation and the rest 1 credit will be allocated for oral (viva-voce) examination.

### **Course: Comprehensive and Viva Voce**