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# **GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY**



## **THIRTY SECOND MEETING OF THE ACADEMIC COUNCIL**

**DATE : 14<sup>th</sup> Aug' 2012 (Tuesday)**

**TIME : 11.00 a.m. onwards**

**VENUE : VC SECTT.,(Conference hall)**

**PROCEEDINGS**

**SECTOR – 16C, DWARKA, NEW DELHI**

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32.03	To Consider and approve amendments in the relevant Clauses of the University's Ordinance 10 (Conduct and Evaluation of Examinations for programmes leading to all Bachelor's Degrees following the Annual System of Examination), Ordinance 11 (Conduct and Evaluation of Examinations for programmes leading to all Bachelor's / Master's Degrees And Under-Graduate/ Post-Graduate Diplomas following Semester System), Ordinance 21 (Conduct and Evaluation of Examinations for Master's Degree programmes in (i) Archaeology & Heritage Management (ii) Conservation, Preservation & Heritage Management), Ordinance 25 (Conduct and Evaluation of Examinations for weekend programme leading to all Bachelor's/ Master's Degrees & Under-Graduate/ Post-Graduate Diplomas following Semester System), Ordinance 27 (Conduct and Evaluation of Examinations for programmes leading to all Master's Degrees following the Annual System of Examination) and Ordinance 29 (Conduct and Evaluation of Examinations for Master's Degrees following Trimester System), so as to resolve the problems of the students who fail to complete the different academic programmes in the laid down maximum duration of the programme.	8-11
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32.10	To appraise about Rescheduling of Semester Examination for BBA (IHM) students of Ashok Institute of Hospitality & Tourism Management.	14
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32.16	To consider the amendment in Regulation No. 2 of Ordinance-12, dealing with the procedure of admission in Ph.D Programme.	17
32.17	To approve the Proforma for six monthly progress report of finally registered research scholars for admission in PhD Programme.	18

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32.18	To approve the non allocation of grace marks to Ph.D scholars in the End-Term Theory Examination of Core Courses.	18
32.19	To consider the request of two research scholars admitted in 2010 for relaxation of not-submitting the annual fee on time for the year 2011.	18
32.20	To ratify the approved scheme and syllabus of M.B.A Disaster Management recommended by Sub-Committee of Academic Council of the concerned school.	18
32.21	To ratify the approved scheme and syllabus of Master of Science (Natural Resources Management) recommended by Sub-Committee of Academic Council of the concerned school.	19
32.22	To consider and approve the panel of subject experts for all academic purposes/activities.	19
32.23	To consider and approve for transfer of University Research Fellowship on account of conversion from regular to part time research fellow or cancellation of registration of any candidate offered fellowship.	19
32.24	To consider and approve the list of journals (No. 10641) to facilitate research scholars, faculty members /supervisors /joint supervisors for academic activities/ research purposes.	20
32.25	To consider and approve the scheme and syllabi of M.Tech.(CSE/IT.IS) for all semesters and M.Tech. (ECE/VLSI/ SP/ RF&M/DC) for first semester only to be effected w.e.f., academic session 2012-13 proposed by University school of Information Technology.	20

*B. K. Reddy*

**Agenda item No: 32.17**

**To approve the Proforma for six monthly progress report of finally registered research scholars for admission in PhD Programme.**

The council approved the proposal according to which registered students shall be required to submit their 6 monthly progress reports (at least 4 during the period of pursuance of PhD programme) to the respective Dean through their supervisor/Guide. The School Research Committee of the respective school shall monitor the academic research progress of each registered scholar and submit a report to this effect for information of the Vice Chancellor and a record of Director Research and Consultancy.

**Agenda item No: 32.18**

**To approve the non allocation of grace marks to Ph.D scholars in the End-Term Theory Examination of Core Courses.**

The council resolved that no grace marks shall be awarded in any examination of Ph.D course work as PhD Degree is the highest degree of the University and only 12(twelve) marks in total are required to be obtained in the four courses offered in two semesters.

**Agenda item No: 32.19**

**To consider the request of two research scholars admitted in 2010 for relaxation of not-submitting the annual fee on time for the year 2011.**

The council authorized the Vice Chancellor to take an appropriate decision in the matter. However, it was resolved that ceiling of the late fee be fixed, in case of any eventuality.

**Agenda Item No.32.20:**

**To ratify the approved scheme and syllabus of MBA Disaster Management recommended by Sub-Committee of Academic Council of the concerned school.**

The council ratified the scheme and syllabus of MBA Disaster Management based on semester system instead of trimester system to be implemented w.e.f., Academic session 2012-13 as approved by the Vice Chancellor.



# *Syllabi and Scheme of Examination*

*for*

**M.B.A. (Disaster Management) Weekend Programme  
(With effect from August, 2012)**



**Centre for Disaster Management Studies  
Guru Gobind Singh Indraprastha University  
Dwarka, New Delhi - 110078**

**Employability/Skill Development/Entrepreneurship**

### First Semester

Course Code	Course Title	Credits
<b>THEORY</b>		
DMW101	Dimensions of Natural Disasters	4
DMW103	Dimensions of Human Induced Disasters	4
DMW105	Disaster Management Laws and Policies	3
DMW107	Management Concepts and Principle	3
DMW109	Ecological Systems and Disaster Management	3
DMW111	Information Technology in Disaster Management	3
DMW113	Term Paper I*(Assignments and Presentations)	2
<b>PRACTICAL</b>		
DMW151	Information Technology in Disaster Management	2
<b>Total :</b>		<b>24</b>

*\*Non-University Examination System*

### Second Semester

Course Code	Course Title	Credits
<b>THEORY</b>		
DMW102	Fundamentals of Geoinformatics	4
DMW104	Disasters and Communication Systems	3
DMW106	Cyber Security and Information Warfare	3
DMW108	Environmental Impact Assessment and Disaster Management	3
DMW110	Public Health in Disaster Management	3
DMW-112	Social Systems and Organizations in Disaster Management	3
DMW114	TermPaper II* (Assignment andP resentation by students)	2
<b>PRACTICALS</b>		
DMW152	Disasters and Communication System	1
DMW154	Fundamentals of Geoinformatics	2
<b>Total :</b>		<b>24</b>

*\*Non-University Examination System*

## M.B.A.(Disaster Management)

### Weekend Programme

#### Third Semester

Course Code	Course Title	Credits
<b>THEORY</b>		
DMW201	Risk Assessment	3
DMW203	Financial Arrangements and Insurance in Disaster Management	3
DMW205	Research Methods in Disaster Management	3
DMW207	Disaster Preparedness and Rehabilitation	3
DMW209	Crisis Management	3
DMW-211	Information and Media Management in Disasters	3
DMW-213	*Incident Response System	2
DMW-215	*Pre-Dissertation: Synopsis and Presentation	2
<b>PRACTICAL</b>		
DMW251	Research Methods in Disaster Management	2
	<b>Total :</b>	<b>24</b>

*\* Non-University Examination System.*

#### Fourth Semester

Course Code	Course Title	Credits
DMW202	Seminar and Progress Reports*	4
DMW204	Dissertation*	24
DMW206	Dissertation presentation and Viva Voce*	8
		<b>36</b>

*\* Non-University Examination*

#### **System.Note:**

1. Total number of credits for Programme MBA (Disaster Management) =**108**
2. Each student shall be required to appear for examination in all courses. However, for the award of the degree, a student shall be required to earn a minimum of 100 credits.

## Dimensions of Natural Disasters

Course Code:DMW101

L-3 T-1C-4

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### UNIT-1

Brief understanding of structure of earth, atmosphere; pressure, temperature, precipitation, cloud classification and formation; and environmental implications. Primary differentiation and formation of core, mantle, crust.

**Natural Disasters:** Types of natural disasters, disaster management cycle; disaster profile of India

### UNIT-2

**Earthquakes:** Introduction, general characteristics, mechanism, causes and effects, prediction, seismic zones, seismic waves, vulnerability, damage potential – magnitude and intensity, geological and geographical analysis, epicenter, characteristics of general motion & attenuation.

**Landslides and Land Degradation:** Causes, tectonic conditions, erosion, avalanches, rockfall, damage assessment.

**Volcanic eruption:** Nature and causes, hazard monitoring and mitigation

**Floods:** General characteristics, causes, geomorphology and floods, flood forecasting, river and coastal floods, flash floods, lake outburst, risks, environmental planning, flood control and management.

### UNIT-3

**Cyclones and Tsunamis:** Structure and nature of cyclones & tsunamis, characteristics, hazard zonation, factors, hazard potential, impact assessment.

**Snow Avalanche:** Formation, types; hazard mitigation and management

### UNIT-4

**Droughts:** Droughts, causes, vulnerability, types, famines, deserts and desertification, drought management in India.

### References:

1. William H. Dennen and Bruce R. Moore, Geology and Engineering, WCB Publishers, Iowa, 1986.
2. John M. Wallace and Peter V. Hobbs, Atmospheric Science: An Introductory Survey, Academic Press, New York, 1977.

3. Egbort Bocker and Rienk Van Grondille, Environmental Physics, John Wiley & SonsLtd., 1999.
4. Barbar W. Murk et. al., Environmental Geology, John Wiley & Sons, New York,1996.
5. Bohle,H.G.,Downing,T.E.andWatts,M.J.Climate change and social vulnerability: the sociology and geography of food insecurity,Global Environmental Change. No.4, pp. 37-48.

## Dimensions of Human Induced Disasters

Course Code:DMW103

L-3T-1C-4

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### Unit- 1

Understanding man-made disasters; types, industrial, environmental, biological disasters, coastal and marine disasters

**Industrial and Technological Disasters:** Fires, urban area fire, structural fire protection and building collapse, action required for rescue and firefighting, fire hazard and protection, forest fire, coal mine fires.

**Accidents:** road, rail, air, sea, transport of hazardous material,

### Unit-2

#### Developmental activities and disasters

Mining and environment, land & environment degradation, mine land reclamation. Nuclear Power and radiation disasters; Reservoir Induced Seismicity, Dam bursts and rehabilitation

### Unit- 3

**Coastal and Marine Environment degradation:** Marine environment and degradation, coastal zone management, Oil spills and its impact.

### Unit-4

**Biological Disasters:** Communicable diseases, factors contributing to vulnerability, bioterrorism, Health risks, biological weapons, armed conflicts, land mines etc

#### Text/References:

1. William H. Dennen and Bruce R. Moore, Geology and Engineering, WCB Publishers, Iowa, 1986.
2. John M. Wallace and Peter V. Hobbs, Atmospheric Science: An Introductory Survey, Academic Press, New York, 1977.
3. Egbort Bocker and Rienk Van Grondille, Environmental Physics, John Wiley & Sons Ltd., 1999.
4. Barbar W. Murk et. al., Environmental Geology, John Wiley & Sons, New York, 1996.
5. Bohle, H.G., Downing, T.E. and Watts, M.J. Climate change and social vulnerability: the sociology and geography of food insecurity, Global Environmental Change. No.4, pp. 37-48.

# GURU GOBIND SINGH INDRAPRASTHAU NIVERSITY

## MBA(DISASTER MANAGEMENT)

### Disaster Management Laws and Policies

Course Code: DMW:105

L-3P-0C-3

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#### **Unit1: Introductory understanding of Law and Legal Systems**

Nature and purpose of Law, Hohfeld Analysis of Rights, Rights and Remedies in Law, Indian Legal and Judicial System, Constitution of India: Supremacy of Indian Constitution, Preamble, Fundamental Rights, DSPS, Fundamental Duties, Constitutional Remedies,

#### **Unit2: Introductory Understanding of Disaster Management Concepts**

Meaning of disaster, elements and Scope of disaster management, Approaches to disaster management, Disaster Management Cycle

#### **Unit3: Legal Framework for Disaster Management in India**

Role and law and public institutions including government in Disaster Management Constitutional Perspectives to Disaster Management, PILs with specific reference to environmental and disaster related issues, Disaster Management Act 2005, Institutional roles and responsibilities for disaster management in India,

#### **Unit4: Policy Framework for Disaster Management**

Significance of Disaster Management Policy, Principles of Disaster Management Policy, Constituent elements of Disaster Management Policy, Disaster Management Policy of India, Gujarat, Introductory understanding of DMP of South Africa and USA

#### **References:**

1. Disaster Management Act-2005
2. National Policy on Disaster Management-2009
3. Hyogo Framework for Action 2005-15
4. International Humanitarian Law Hans Peter Gasser-1993
5. International Humanitarian Law, Larry May Bee, Benarjii Chakka

# GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY

## MBA(DISASTERMANAGEMENT)

### Management Concepts and Principles

Course Code: DMW:107

L-3P-0C-3

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#### UNIT1

Human relation management Theory, Behavior Science approach, Management science theory, Contemporary management approach

#### UNIT2

Planning:—organization goal, Strategy, Standing use plans and single use plan, co-ordinate and integrate resources

Organizing:-process, principle, authority and responsibility, organization charts, graphic representation.

#### UNIT3

Leading:- Early approaches, contingency theories, other leadership approaches, Effective leadership, Theories of motivation

Controlling:-Define and specify critical goals, appropriate standards, compare performance with standards, make corrections

#### UNIT4

Decision making:-Organizational decisions, basic theories, logical reasoning process, Creative thinking

Managing change:-Effective change management, tactics for dealing with resistance to change.

#### References/Text

1. Pareek, U.(2007) Understanding Organisational Behaviour, New Delhi, Oxford University Press
2. James A.F., Stoner, R. Gilbert, D.R., (1995) Management., 6th edition, Prentice Hall, Inc.,
3. Luthans, F. (2002). Organizational Behaviour, 9<sup>th</sup> edition, New Delhi: Tata McGraw Hill

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY**  
**MBA(DISASTERMANAGEMENT)**  
**Ecological Systems and Disaster Management**

CourseCode:DMW:109

L-3P-0C-3

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**UNIT1:**

**Introduction:** definitions, history and relevance, levels of organization, environment-physical environment, biotic environment, biotic and abiotic interaction

**Population Ecology:** Populations and population change, population dispersion, survivorship curves, population growth patterns and population dynamics

**Community Ecology:** structure, types of interaction between species, inter specific competition and coexistence, patterns of diversity, energy flow in natural communities.

**Ecosystems:** Concept and structure of ecosystems, ecological pyramids, productivity, energy flow in ecosystems, nutrient cycling; succession; biogeochemical cycles - (N,C,P,S), hydrological cycling

**UNIT2**

**Habitat Ecology:** Wetlands and Aquatic ecosystems, types, Ramsar sites in India; Terrestrial ecosystems-biomes.

**Landscape Ecology:** definition, landscape elements, corridor types, island biogeography theory, metapopulations, fragmentation.

**Ecosystem Conservation:** Ecosystem degradation, Ecosystem concepts of conservation and rehabilitation; wetland management, watershed management, Forest management concepts, wildlife management: national parks, sanctuaries and biosphere reserves.

**Unit 3**

**Sustainability and Sustainable Development:** concepts and issues, carrying capacity, Agenda-21. Green House effect and climate change, climate change and ecosystems responses.

**Disasters and Ecosystem based management:** Disasters as a disturbance in ecosystems, ecosystem response to disasters; recovery.

**Books/References**

1. Richard B. Primack(1993). Essentials of Conservation Biology.Sinauer Associates
2. Owen and Oliver S. (2000). Natural Resource Conservation: An Ecological Approach. Pearson Higher Education
3. Smith and Robert Leo (1992).Element of Ecology. Benjamin-Cummings Publishing Company.
4. Peter Stiling (2002) Ecology: Theories and Applications.4th Edition PHI,New Delhi.

5. E.P.Odum and Gary W. Barret (2007). Fundamentals of Ecology, 5<sup>th</sup> Edition, First Indian Reprint, Thomson Brooks /Cole
6. Peter P. Rogers, Kazi F. Jalal, and John A Boyd.(2007).An Introduction to Sustainable Development. Earthscan Publications.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY**  
**MBA(DISASTER MANAGEMENT)**  
**Information Technology in Disaster Management**

Course Code: DMW:111

L-3P-0C-3

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**UNIT-1**

**Introduction to Computers**

Introduction to computer, its components and functions, applications in various fields of science and management.

**Data Storage:** Primary and Secondary storage, Introduction to various computer devices such as keyboard, mouse, printers, diskfiles, etc.

**Data representation:** Number systems, character representation codes, binary, hex, octal codes and their interconversions. Binary arithmetic, Floating point arithmetic, signed and unsigned numbers. Concepts of the finite storage, bits, bytes, kilo, mega and gigabytes, Concepts of character representation.

**Concepts of computing,** contemporary, operating systems such as DOS, Windows 7, UNIX etc. (only brief user level description).

Introduction to Internet and its use.

**UNIT-2**

**Role of Information in Disaster Management:** disaster information and management, conceptual flow of disaster-related information.

**Needs of the users of Disaster Information:** Background, capturing user needs, current environment.

**Disaster Information Provider:** Responsibilities of the provider community, functions of the provider community, information generation, recent changes.

**Disaster Information Infrastructure:** Information infrastructure needs by disaster phase, modes of communication, future of the disaster information infrastructure.

**UNIT-3**

**Disaster Information Network (DIN) for the Future:** Background, foundation for addressing needs vision for a future disaster information network, fundamental need to involve stakeholders.

**Recommendation and Action Plan:** Policy and organization implementation, phased approach: Global extension, analysis of the ratio of costs to benefits.

**Global Considerations:** Global phase, GDIN international goals, priorities, GDIN international model, possible GDIN management packages, possible GDIN partners.

**References:**

1. Gary B. Shelley, Thomas I Cashmar, Mistry E. Vermoat: Discovering Computers 2005: A gateway to information.

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY**

**MBA(DISASTER MANAGEMENT)**

**Term Paper-I (Assignment and Presentation)**

Course Code: DMW:113

L-2, P-0,C-2

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**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY**  
**MBA(DISASTER MANAGEMENT)**  
**Information Technology in Disaster Management(Practical)**

Course Code: DMW:151

L-0, P-2,C-2

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**Based on Syllabus of Theory Paper (DMW106)**

# GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY

## MBA(DISASTER MANAGEMENT)

### Fundamentals of Geoinformatics

Course Code: DMW:102

L-4P-0C-4

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#### Unit 1

##### Remote Sensing - Introduction

Introduction to remote sensing, definition, physical basis of remote sensing, electromagnetic spectrum, radiation laws, atmospheric effects, basics of optical, thermal and microwave remote sensing, history of remote sensing, geometric and radiometric aspects of RS data. EMR interaction with earth surface materials, Spectral signatures of vegetation, water, soil, snow etc. in different regions of EMR, ground truth data.

#### Unit 2

##### Platforms, Sensors and Satellites

Aerial and space borne platforms, orbits, sensors types—optical (multispectral, hyperspectral), thermal and microwave, resolutions, Satellites: Landsat, SPOT, IRS, ERS, Radarsat, RISAT, and other operational remote sensing satellites.

##### Data Analysis

Visual interpretation— Scale, maps and map projections, interpretation keys; image characteristics, media and formats of digital images, image enhancement, image transformations, classification – unsupervised and supervised classification, classifiers, accuracy estimation, change detection.

#### Unit 3

##### Geographical Information System and GPS

Introduction, GIS definition and terminology, data types, raster and vector data, GIS database design, spatial database creation – digitization, scanning; processing of data, GIS implementation and project management. commercially available remote sensing and GIS softwares, GPS and applications.

#### Unit 4

##### Geoinformatics in Disaster Management

Ecosystem inventory and monitoring, landslides, forest fires, earthquakes, Tsunamis, Cyclone, floods, snow/avalanches; Geospatial techniques in urban disaster management.

**Text/References:**

1. C.P.Lo and Albert K.W. Yeung (2009). Concepts and Techniques of Geographic Information Systems, 2<sup>nd</sup> Edition, PHI Learning Pvt. Ltd., New Delhi.
2. John R. Jensen (2009). Remote Sensing of the Environment: An Earth Resource Perspective. 2<sup>nd</sup> Edition, Dorling Kindersley (India) Pvt. Ltd, NOIDA, India.
3. George Joseph (2005). Fundamentals of Remote Sensing. 2<sup>nd</sup> Edition, Universities Press (India) Ltd., Hyderabad.
4. Thomas Lillis and, Ralph W. Kiefer, and Jonathan Chipman (2007). Remote Sensing and Image Interpretation. Wiley India
5. John R. Jensen (2004). Introductory Digital Image Processing: A Remote Sensing Perspective. Prentice Hall.
6. P.A. Burrough (2007). Principles of Geographical Information System. Oxford University Press, USA

**GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY**  
**MBA(DISASTER MANAGEMENT)**  
**Disasters in Communication Systems**

Course Code: DMW:104

L-3P-OC-3

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**UNIT-1**

**Introduction to Telecommunications**

Communications Principles & Systems; Analog Vs. Digital Communications; Satellite Vs. Terrestrial Communications; Practical Vs. Ideal Channels: Distortion & Noise Effects; Overview of transmission media; Concept of Modulation: Baseband Vs. Passband Transmission; Amplitude, Phase & Frequency Modulation Techniques (AM/PM/FM); **Radio Broadcast Systems:** AM/FM Radio Systems, HAM radio  
**Telecommunications Networks:** POTS, Local loops, Switched telephone and data networks, Switching methods

**UNIT-2**

**Multiple Access & Multiplexing**

Multiple Access Vs. Multiplexing; **Frequency Division Multiplexing / Frequency Division Multiple Access (FDM / FDMA); Time Division Multiplexing / Time Division Multiple Access (TDM/TDMA); Code Division Multiplexing / Code Division Multiple Access (CDM/CDMA)**

**Electronic Warning Systems**

Electronic Warning systems: Sensors, Alarms & Information Networks; Role of Communications Systems in Prediction / Early Warning of Impending Disasters; Effect of disasters on wire line and wireless communication links under catastrophe. Post-disaster management through establishment of fresh / emergency communication links

**UNIT-3**

**Wireless Voice Centric Communications**

Mobile vs. Cellular Telecommunications; Concept of cells, **frequency reuse & handoffs; Channel transmission mechanisms: LOS, IG/ 2G/ 3G voice oriented wireless technology**

**UNIT-4**

**Satellite Communications**

Concept of satellites as repeaters in space: downlink / uplink channels & transponders; Satellite Vs. Conventional Terrestrial Systems; Orbital laws, beam switching, satellite footprints & diversity concepts; LEO Vs MEO Vs GEO satellites; Mobile satellite telecommunications; Role of satellite communication links in disaster management

## References

1. Communication Systems by Kennedy (Publishers: TMH)
2. Data Communications and Networking by Forouzan, 2<sup>nd</sup> edition(TMH).
3. Electronic Communication Systems byTomasi,4<sup>th</sup>edition(Pearson Education).
4. Satellite Communication Engineering by Gagliardi(Publishers: John Wiley)

## Cyber Security and Information warfare

Course Code: DMW:106

L-3P-0C-3

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### UNIT-1

Cyber Security: Concept of Information Society, Critical information infrastructure, Computer and Internet Security, Cybercrimes, Business risk, Infrastructural attack, Cyber terrorism: Tools and techniques of a cyber terrorist, Potential targets and threats of cyberterrorist, Counter measures: preventive and deterrent, International cyber terrorism: threats, concerns and counter measures. Legal provisions to counter cyberterrorism and cybercrime *viz a viz* Information Technology Act

### UNIT-2

IT Audit Review: Critical Security Issues: Identifying potential security risks—risk analysis, Network security issues—LANs, WANs, MANs, PANs, firewalls, routers, Intranet/Extranet security, Application development (PDLC) risks, Data mining, business intelligence, associated risks and concerns, Data quality issues, Issues in detecting, controlling and mitigating fraud, IT security as a part of corporate governance, Security management best practices.

Corporate Governance/ Compliance and IT Audit Function: Overview of audit's mandate, applications and infrastructure, corporate policies, audit involvement and examination of IT, Benefits of partnership between audit and IT management, Current standards, IT infrastructure and operations.

### UNIT-3

Business Continuity/Incident Management Planning: Disaster vs. business interruption, Analyzing risk, Developing a risk management policy, Analyzing business impacts, Control considerations in an automated office environment, Developing and exercising a business continuity /incident management plan.

### References

1. Managerial Guide for Handling Cyber-Terrorism and Information Warfare
2. Lech Janczewski (University of Auckland, New Zealand) and Andrew Colarik (Andrew Colarik.com, USA).
3. Inside Cyber Warfare, Jeffrey Carr, Lewis Shepherd

# Environmental Impact Assessment (EIA) & Disaster Management

Course Code: DMW:108

L-3 P-0C-3

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## UNIT-1

Introduction To EIA: Purpose of EIA; Environmental components, projects and its environmental impacts, Environmental impact statement; Projects screening and scoping; Environmental baseline study.

## UNIT-2

Impact Assessment Procedure: Applications of Matrices; Networks and Overlay maps; Environmental evaluation system; Transnational effects of projects; Impact identification; Impact prediction; Evaluation and mitigation; Monitoring and Environmental auditing; Regional and strategic EIA, Environmental management plan; Cost benefit analysis and its dimensions; Problems of EIA in developing countries; Public participation in environmental decision making, presentation and review; EIA report and its contents.

## UNIT-3

GIS In Disaster Management: GIS as effective tool in Disaster management and planning, response requirement study, alternate route for sending relief and shortest evacuation routes. Display and identification of damaged and unsafe structures. Map creation for action plan identification of risk and planning needs.

## UNIT-4

Case Studies: River valley projects; opencast mining projects; thermal power generation; urbanization and highway project

### Text/References:

1. John Glasson, Riki Therivel and Andrew Chadwick, Introduction to Environmental Impact Assessment, 2<sup>nd</sup> Ed., UCL Press, Philadelphia, USA, 1994
2. Singh, R.B. Space technology for Disaster Monitoring and Mitigation in India, INCEDE, University of Tokyo.
3. Larry W. Canter, Environmental Impact Assessment, 2<sup>nd</sup> Ed. ,McGraw Hill, New York, 1996.
4. Richard K. Morgan, Environmental Impact Assessment: A methodological perspective, Kluwer Academic Publications, Boston, 1998.

## Public Health in Disaster Management

Course Code: DMW:110

L-3P-OC-3

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### Unit-1

Public Health and its role in disaster management: public health systems, health promotion and disaster prevention, integrated approach. Public health emergencies in Disasters–Waterborne, vectorborne and zoonotic diseases. Mass casualty preparedness and response: Hospital preparedness / Mass gathering medicine.

### Unit-2

**Epidemiology;** areas of public health; environmental and occupational health; epidemics as a disaster.

**Health policy and management:** Public health practices, public health in emergencies: Humanitarian character, standards, code of conduct, HIV AIDS in reproductive health, infectious diseases, nutrition, avian flu, Management of temporary shelters, water and sanitation emergencies.

### Unit-3

Red Cross Movement. Role of NGOs, CBOs, Armed forces, educational institutions, occupation groups, professionals, and technical groups and their coordination in health emergencies in disasters.

### Unit- 4

Case Studies of medical and health interventions in disaster management

### References:

1. Guidelines on Medical Preparedness and Mass Casualty Management, NDMA Guidelines
2. Public Health Management of Disasters: The Practice Guide, Linda Young Landesman, American Public Health Association, 01-Oct-2005

## Social Systems and Organizations in Disaster Management

Course Code: DMW:112

L-3P-0C-3

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### **Unit1:Disaster Management and Community**

Community and social solidarity; Role of local community in Disaster Management, Disaster resilient community, habitualization and culturalization of Disaster Management practices, Community based disaster management practices–case studies. Socio-economic vulnerability to disaster, gender perspective to disasters

### **Unit2:Professionalizing Disaster Management Services**

Humanitarian Professionalism, Professionalism and humanitarianism in Disaster Management, understanding and appraisal of the role of voluntary organizations in disaster management.

### **Unit3:Resource Mobilization in Disaster Management**

Trends in Resource Mobilization for Disaster Management, Disaster Management Budgeting, Risk Sharing and risk transfer systems, Sustainable Disaster Management Budgeting, Disaster Management and Economic Development

### **Unit4: Agencies in Disaster Management**

Organizational structure, mandate, role and functions of national and international agencies involved in disaster management - National Disaster Management Authority, National Institute of Disaster Management, National Disaster Response Force; Indian Red Cross Society, UNO associated organizations, International Federation of Red Cross and Red Crescent Society.

### **References**

1. OHO Lerbinger, (1986), The Crisis Manager, Facing risk and responsibility, Lawrence Erlbaum associates.
2. Horowitz, M (1986), Stress response syndromes, Northvale, N.J. Armson.
3. Peter, K. Hodgkinson, (1998), Coping with Catastrophe, A handbook of post disaster psychological aftercare. Routledge.
4. Kazimiera Adamowski (1998), Creating Excellence in Crisis Care, John Wiley & Sons Inc. Psychosocial Support for Disaster Affected population in India, World Health Organization, India
5. Joseph O, Prewitt Diaz, 2004, Disaster Mental Health in India, Voluntry Health Association Of India

## **TermPaper-II(Assignmentand Presentation)**

Course Code:DMW:114

L-0P-0C-2

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## **Disasters and Communication System(Practical)**

Course Code: DMW:152

L-OP-1C-1

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**Based on Syllabus of Theory Paper (DMW110)**

## **Fundamentals of Geoinformatics (Practical)**

Course Code: DMW:154

L-0P-2C-2

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**Based on Syllabus of Theory Paper (DMW102)**

# Risk Assessment

Course Code: DMW:201

L-3P-OC-3

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## UNIT-1

**Introduction to risk evaluation;** Definition of risk and fundamentals of risk analysis; environmental hazards, exposure and risk assessment, risk evaluation and management; Basic methodology in risk assessment, hazard identification, dose - response assessment, exposure assessment, and risk characterization.

## UNIT-2

**Assessment of risks for different disaster types,** extreme event analysis, hazard ecology, chemical load and environmental health risk, carcinogenic materials and environment, impact on immune, reproduction and nervous system, risk adjustment, choice and loss acceptance; spectacular deaths and carcinogens.

## UNIT-3

**Collection of data and information,** Quantified risk assessment for industrial accidents; release of toxic products, Dispersion analysis, and HAZOP study. Risk assessment applications for disaster mitigation and management problems.

## UNIT-4

**Design of Risk management program,** methodology of stocktaking, concept of vulnerability and analysis, exposure, preparedness, prevention and response analysis.

## References:

1. Freeman, H. M. (ed.), 1989, Standard Handbook of Hazardous Waste treatment and Disposal, McGrawH, New York.
2. William, P.L.; and J.L. Burson, 1985, Industrial Toxicology, Safety and Health Applications in the work place, Van Nostrand Reinhold, New York.
3. Willson, R; and E.A. C. Crouch, 1987, Risk assessment and comparisons: An Introduction, Science 17, 1987, pp267-270.
4. Petak, W.J. and Atkisson, A, A. Natural Hazard Risk Assessment and Public Policy: Anticipating and Unexpected, Springer; New York. 1982.

## Financial Arrangements and Insurance in Disaster Management

Course Code:DMW:203

L-3 P-0C-3

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### UNIT-1

**Introduction to Banking & Finance:** Theory of money & credit, money and banking systems; Bank credit and clearing operations; Banking law; Bank operations analysis; Tax administration; Public budgeting and finance systems; state and local finances.

### UNIT-2

**Insurance and Risk Management:** Introduction to risk, risk identification and evaluation; property loss exposures; Life, health and loss of income exposures; Risk management techniques; insurance principles and policy provisions; insurance industry and regulatory framework.

### UNIT-3

**Welfare Economics:** Public goods; Private goods; Demand revealing mechanism; Externalities; Solution to the problem of externalities; Command and control approach; Market based approach; Taxes and subsidies; Tradable permits.

### UNIT-4

**Insurance Policies for Disaster Management:** Evaluation of risk funding and risk transfer policies; catastrophe insurance pool; Reserve funds and contingent credit policies; Role of Government and market participants; Insurance policy design; Fiscal cost of relief and reconstruction; Grants and low interest loan for reconstruction; Case Studies and review of Disaster insurance models.

### Readings:

1. Hulme, David and Paul Mosley, "Finance against Poverty", Routledge London, 1996.
2. Meyer, Richard L, "Micro finance, Poverty alleviation and Improving Food Security: Implications for India" in Food Security and Environmental Quality, CRC Press LLC, Boca Raton, FL. 2002.
3. ADB, "Finance for the Poor: Microfinance Development Strategy", Asian Development Bank, Manila, 2000.
4. Bouman, FJA, "Small, Short and Unsecured: Informal Rural Finance in India", Oxford University Press, Delhi, 1989.

# Research Methods in Disaster Management

CourseCode:DMW:205

L-3P-0C-3

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## UNIT-1

**Introduction:** Research—definition, scope and objective, types, approaches, significance; scientific investigation. Research process – preliminary data collection, problem, selection and definition, theoretical framework, hypothesis development and elements of research design. Experimental design – laboratory experiment, variables, validity, types of experimental designs.

## UNIT-2

**Data measurement, collection, processing and analysis:** Measurement—measurement in research, operational definition, measurement scales, scaling and scaling techniques, reliability and validity. Data collection—sources of data, data collection methods: interviewing, questionnaires, other methods of data collection. Data processing and analysis – review of statistical data analysis.

## UNIT-3

**Sampling:** Introduction—Need and purpose of sampling, population and sample, Population frame, sampling with and without replacement, population parameters. Sampling theory – sampling distributions, parameter estimation, hypothesis testing. Sampling designs—probability and non-probability sampling

## UNIT-4

**Interpretation and Report Writing:** Interpretation – meaning, need, technique. Report writing – research proposal, report, integral parts of the report, steps involved in report writing, types of reports, oral presentation, conclusions.

## Reading List

1. Singleton.R.A.Jr, and Straits B. C. (1999). Approaches to Social Research. Oxford University Press, New York.
2. Moore, D.S. (1999). The Basic Practice of Statistics. W.H. Freedman, NY.
3. De Vaus, D.A. (1995). Surveys in Social Research. Allen & Unwin, Sydney, NSW, 1995.
4. Foddy, W. (1994). Constructing Questions for Interviews and Questionnaires. Cambridge University Press, Cambridge, .
5. Scarborough E., E. Tanenbaum (1998) Research Strategies in the Social Sciences. Oxford University Press. Oxford.

# Disaster Preparedness and Rehabilitation

CourseCode:DMW:207

L-3P-0 C-3

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## UNIT-I

### **Institutional framework for disaster preparedness, mitigation and rehabilitation -**

Managing natural and anthropogenic disasters, Principles and Practice of disaster response operations and management, Disaster Preparedness Planning, Role and responsibilities of Central, State, District and Local Administration, Public Administration/Policy and Emergency Management, corporate/public agency coordination, the human element in preparedness planning, Current trends in disaster preparedness. Community based disaster management plan

## UNIT-2

**Hazard monitoring:** Early warning systems, warning protocols, India Disaster Resource Network, public health aspects of disaster management and emergency services systems, urban hazards and disasters: an introduction to disaster planning, fire services preparedness, Emergency Sanitation/Shelter environments.

## UNIT-3

**Emergency Management:** Operational decision making, Introduction of recovery, reconstruction and rehabilitation; relationship between development and disasters; types of damage and its assessment, short, medium and long term recovery, rehabilitation and rehabilitation aspects, community participation in defining objectives and their priorities; development of physical and economic infrastructure.

## UNIT-4

**Principles of natural hazard reduction:** Toxicology and Biohazards in Emergency Management, Terrorism Preparedness, Emergency Preparedness, Response, and Planning, Nature of damage to utilities and dwelling by different types of disasters; retrofitting of buildings and other utilities; trauma and stress management; training and awareness; International and national case studies of disaster preparedness, recovery, reconstruction and rehabilitation

### **References:**

1. Collins Larry R. and Schneid Thomas D., Disaster Management and Preparedness Taylor and Francis 2000
2. Goel S.L. and Kumar Ram, Disaster Management, Deep and Deep Publications, 2001

3. LivingWithRisk:AglobalReviewofDisasterReductionInitiatives2004Vision,UnitedNations, 2004.
4. ParasuramanS.,IndiaDisastersReport:TowardsPolicyInitiatives,OxfordUniversityPress,2004.
5. Arnold,MargaretandKreimer,Alcira(eds.),"ManagingDisasterRiskinEmergingEconomies", Disaster RiskManagement Series No. 2, WorldBank, Washington, D.C., 2000.
6. NDMA(GOI)Guidelines

## Crisis Management

CourseCode:DMW:209

L-2P-1C-3

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### UNIT-1

**Disasters Issues and Crisis Management:** Definitions and Overview of risks and dangers, Impact of globalization on crisis and mass disasters.

### UNIT-2

**Identifying Potential Crisis Situations:** Discussion on selected case studies to analyze the potential impact of disasters, Preparation of a foundation of a sound crisis management plan.

### UNIT-3

**Crisis Management Preparedness:** Preparing the plan, Training and Testing, Crisis communication, Stress management, Crisis operation guidelines.

### UNIT-4

**The Disaster Recovery Planning:** Emergency management teams, National and International disaster recovery policies, Managing the economy and essential services in emergencies, Managing the media and popular conscience.

### References:

1. Mutchopadhyaya, A.K., 2005, Crisis and disaster management: tuberlance and aftermath”, New age International Publications, New Delhi.

# Information and Media Management in Disasters

Course Code: DMW:211

L-3P-0C-3

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## Unit-1

Types of media, importance of role of media—informative, suggestive, analytical; role of media in disaster mitigation.

## Unit-2

Factual and ethical reporting; impact of media coverage and public communication, handling of media

## Unit-3

Concept of information society, critical information infrastructure, computer and internet security, cybercrimes.

## Unit 4

Professionalism in media reporting for better disaster management; case studies

## References/Texts

1. Handbook of Social Media Management, Value Chain and Business Models in Changing Media Markets, Friedrichsen, Mike; Mühl-Benninghaus, Wolfgang (Eds.) 2003
2. Media Management, Leveraging Content for Profitable Growth, Vizjak, Andrej; Ringlstetter, Max Josef (Eds.), Original German edition published by Gabler Verlag, Wiesbaden, 2001, Germany, 2003,

## **Incident Response System\***

CourseCode:DMW:213

L-2P-0C-2

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### **Unit-1**

Defining the system and criteria reason for having an IRS, System characteristics, common terminology used,resource elements for particular disciplines Facilities and its defined functions; Standard organizational position, Integrated communications, Comprehensive resource utilization, Command responsibilities, operation system responsibilities

### **Unit-2**

Planning-staff positions, logistics, finance; Incident action planning process, Forms used in the process, Organisation assessment list, division assignment,Communication,communication plan,support vehicle inventory, air operation, Medical plan,organization chart, incident status summary, Checklist, unitlog,operational planning,worksheet; procedure for integration with volunteers.

### **References**

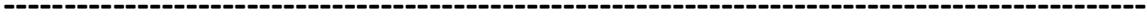
1. Lindell, Michael K., Prater, Carla & Perry, Ronald W., 2007, Introduction to Emergency Management, John Wiley & Sons, 584pp., ISBN-10:0-471-77260-7.
2. Hoffman, Judith C., 2008 (4th Ed.). Keeping Cool on the Hot Seat: Dealing Effectively with the Media in Times of Crisis. Four C's Publishing Co., Highland Mills, NY. 244 pp.,ISBN-13:978-0-9709014-2-2.
3. Waugh, Jr., William L. & Tierney, Kathleen, 2007, Emergency Management: Principles and Practice for Local Government(2ndEd.) 360pp., ISBN:978-0-87326-719-9.
4. National Fire Protection Association. 2007. NFPA 1600, Standard on Disaster/Emergency Management and Business Continuity Programs. NFPA.Quincy, MA.51pp.

**\*Non-university Exam System**

## **Pre Dissertation: Synopsis and Presentation**

Course Code: DMW:215

C-2



## **Research Methods in Disaster Management(Practical)**

Course Code: DMW:251

L-OP-2C-2

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**Based on Syllabus of TheoryPaper (DMW205)**

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**Seminar and Progress Reports\***

Each student will have to present the progress of the dissertation work through seminars and progress reports, at an interval of *four weeks* during the semester. Minimum two seminars will be held during the semester to assess the progress of dissertation work.

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**Dissertation\***

Student will submit a synopsis on the dissertation in the Third Semester for approval from the Centre Project Committee in a specified format. Students will continue their dissertation in the fourth semester. The first defence for dissertation work would be held within a month. Dissertation report must be submitted in a specified format to the Centre for evaluation purpose within six months of the commencement of the semester.

**\*Non university examination system**

**Dissertation Presentation and Viva Voce \***

Students are required to give viva-voce exam after the submission of dissertation.

**\*Non university examination system**

