GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY

Guru Gobind Singh Indraprastha University
Sector – 16C Dwarka, New Delhi – 110078

(Coordination Branch)
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F.No.: GGSIPU/Co-ord./46th AC/2019/17 Dated: 13 August 2019

CIRCULAR

The 46th meeting of the Academic Council of the University was held on 22.07.2019. Please find enclose herewith the minutes of the 46th meeting of the Academic Council for kind information.

(Brig. P.K. Upmanyu)
Registrar

F.No.: GGSIPU/Co-ord./46th AC/2019/17 Dated: 13 August 2019

To

1. Dean- USBAS/ USBT/ USCT/ USEM/ USICT/ USHSS/ USMC/ USLLS/ USM&PMHS/ USMS/ USAP/ USE, GGSIP University
2. Director- Academic Affairs/ Coordination/ Students' Welfare/ CDMS/ Development/ International Affairs/ CEPS/ Research and Consultancy/ Legal Aid / IUIIC, GGSIP University
3. Librarian, GGSIP University
4. Prof. P.K. Jhulka, (Retired), Max Institute of Cancer Care, 26-A Ring Road, Nirmal Puri, Nirmal Colony, Block-2, Lajpat Nagar-IV, New Delhi-110024
5. Prof. M.C. Sharma, 109, Nav Shakti Sadan, Sector 13, Rohini, New Delhi-110085
6. Prof. Karmeshu, (Retired), 150, Deepali, Road No. 42, Pitampura, Delhi-110034
7. Sh Arvind Misra, 5/101, Mathura Road, Agra-282002
8. Shri. Sandeep Gupta, 100 UB Jawahar Nagar, Delhi-110007
9. Prof. Rajiv Bhat, School of Biotechnology, Jawaharlal Nehru University, New Delhi
10. Prof. (Dr.) Pradeep Kulshrestha, Dean, School of Law, Sharda University, Plot No. 32 & 34, Knowledge Part-III, Greater Noida-201306 (UP)
11. Dr. Rupal S. Randhawa, 204-A, Pocket B, Mayur Vihar, Phase-2, New Delhi-110091
12. Prof. P.N. Varshney, E-30, Greater Kailash-III, New Delhi-110048
13. Dr. Jagdish Lal Gupta, CP-18, Maurya Enclave, Pitam Pura, Delhi-110034
14. Prof. M.N. Hooda, Director, Bharti Vidyapeeth's Institute of Computer Application & Management, A-4, Paschim Vihar, Rohtak Road, New Delhi-110063
15. Dr. Surendra Kumar, Principal, Delhi Institute of Rural Development, Holambi Khurd, Delhi-110082
16. Dr. Maharaj Krishen Bhat, Director, Maharaja Agrasen Institute of Management Studies, Maharaja Agrasen Camp, Plot No.1, Sec-22, Rohini, Delhi-110086

Contd.....2/-

17. Dr. Dhirendra Srivastava, Principal, ESIC Dental College & Hospital, Sector-15, Rohini, New Delhi -110085
18. Prof. Sanjiv Mittal, University School of Management Studies, GGSIP University
19. Prof. U.K. Mandal, University School of Chemical Technology, GGSIP University
20. Prof. Udyan Ghosh, University School of Information Communication & Technology, GGSIP University
21. Dr. Nimisha Sharma, Associate Professor University School of Biotechnology, GGSIP University
22. Dr. Gulshan Dhamija, Asst. Professor, University School of Basic and Applied Science, GGSIP University

Copy for information of the Competent Authority:
(i) AR to the Vice Chancellor, GGSIP University
(ii) AR to the Registrar, GGSIP University

Shikha

(Shikha Agarwal)
Dy.Registrar (Co-ordination)

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY
SECTOR – 16 C, DWARKA, NEW DELHI - 110078

GURU GOBIND SINGH
INDRAPRASTHA
UNIVERSITY

FORTY SIXTH MEETING OF THE ACADEMIC COUNCIL

DATE : 22ND JULY, 2019 (Monday)

TIME : 03:00 P.M.

VENUE : VC SECTT., (Conference Hall)

MINUTES FOR 46TH ACADEMIC COUNCIL MEETING

INDEX

Agenda Item No. AC 46.21: **To consider and approve the start of Six Months Diploma (Full Time/Part Time) and One year PG Diploma (Full Time/Part Time) in Disaster Management and approval of Syllabus.**

The Academic Council considered and approved the proposal and syllabus for starting of Six Months Diploma (Full Time/Part Time) and One year PG Diploma (Full Time/Part Time) in Disaster Management.

Agenda Item No. AC 46.22: **To Consider and approve the start of Ph.D. programme (Full Time/ Part Time) and Syllabus of Ph.D. programme offered by CDMS from Academic Session 2019-2020.**

The Academic Council considered and approved the proposal and syllabus for starting of Ph.D. programme (Full Time/ Part Time) and Syllabus of Ph.D. programme offered by CDMS from Academic Session 2019-2020.

Agenda Item No. AC 46.23: **Ratification of MoUs of Centre for Disaster Management Studies (CDMS), GGSIPU with Gujarat Institute of Disaster Management (GIDM), Centre for Disaster Management (CDM), Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie, National Fire Service College, Nagpur, Maharashtra, and National Institute of Disaster Management (NIDM), Delhi in pursuance of 66th Board of Management Resolution vide letter No. F.IPU/JR(C)/66th BOM/2018/519 dated 16/10/18.**

The Academic Council ratified the MOU(s) of CDMS, GGSIPU with Gujarat Institute of Disaster Management (GIDM), Centre for Disaster Management (CDM), Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie, National Fire Service College, Nagpur, Maharashtra, and National Institute of Disaster Management (NIDM).

Agenda Item No. AC 46.24: **To consider and approve the start of One Year PG Diploma (Full Time/Part Time) in Fire and Life Safety Audit and approval of the Syllabus.**

The Academic Council considered and approved the proposal and syllabus for starting of One year PG Diploma (Full Time/Part Time) in Fire and Life Safety Audit.

Syllabi and Scheme of Examination

for

Ph. D. Course Work for One Semester

(With effect from August, 2019)

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

Employability/Skill Development/Entrepreneurship

Approved in the 46th meeting of the Academic Council vide agenda item 46.22 w.e.f. 2019

Ph.D. (Disaster Management)

Vision
To be a leading Centre of Excellence (COE) for Research in Disaster Management Education in the country.

Mission
Provide platform to the researchers as a step towards finding solutions of challenging aspects of disaster management.

Programme Objectives (PO)

The objectives of PhD programme in Disaster Management are:

PO 1: To apply the various concepts, theories and models and new technologies in the area of Disaster Risk Reduction, Disaster Prevention and Disaster Response and Rehabilitation etc.
PO 2: To perform research towards building back a better sustainable environment amidst various challenges being faced from manmade and natural disasters and thereby making resilient India.
PO3: To identify, formulate and select research problem; Hypothesis Development and research design in disaster risk reduction.
PO4: To devise the humanitarian and ethical values required for being socially responsible and environmental sensitive professional in business.

Programme Learning Outcomes (PLO):

The expected outcomes after completing the program would be:

PLO1: Systematic study of phenomenon arising out of the disaster situation and in all phases of disasters i.e. Pre-Disaster, During Disasters and Post Disasters.
PLO2: Knowledge of new technologies, tools and techniques which are likely to be applied during every stages of research process.
PLO3: Investigation of Business Problems: Summarize and apply the research based knowledge and practical exposure in the real business world.
PLO4: Identifying better, new and improved solutions to the existing gaps in order to have Disaster Risk Mitigation and Disaster Risk Reduction
PLO5: Institutional Capacity Building in all aspects of Research Process
PLO6: The scholar will learn to apply ethical principles and commitment towards professional ethics.
PLO7: Global Perspective: This programme will enhance ability to assess and evaluate the dynamics of internal and external elements of the competitive global environment.
PLO8: Legal Knowledge: Application/ recommendations of new Legal Provisions based on the basis of findings during research

Program Specific Outcomes (PSO):

PSO1: Acquire Practical learning opportunity of various Statistical /Analytical tools

PSO2: Knowledge on Approach to Research Process and various area of Disaster Risk Reduction, Disaster Prevention and Disaster Response and Rehabilitation etc. to solve the complex challenges in disaster situations.

PSO3: Understand and develop the new dimensions of knowledge to cater the need of the society and nation.

PSO4: Building a sustainable Business Continuity Plan during Disaster

CENTRE FOR DISASTER MANAGEMENT STUDIES
GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY
SECTOR 16 C, DWARKA, NEW DELHI -110078

Scheme of Ph. D. Course Work for one semester

Course Code	Course	(Credit Hours)	
PDM 901	Research Methodology for Disaster Risk Reduction (DDR)	4	**(Compulsory Paper)**
PDM 902	Research and Publication Ethics (RPE)	2	
PDM 903	Concepts of Disaster Management	4	**Any Two**
PDM 904	Geoinformatics and ICT for Disaster Management	4	
PDM 905	Governance of Disaster Management	4	
PDM 906	Strategic, Operations and Business Continuity Management	4	
PDM 907	Industrial Security & Disaster Management	4	
PDM 908	Fire Safety and Disaster Risk Reduction	4	

Total Credit Hour requirement: 14 (4+2) + (4+4)

Detailed Syllabus for the course work of 6 months under Ph. D. Programme (Disaster Management):

PDM 901: Research Methodology for DRM (Compulsory Paper)

Course Outcome

CO 1: Research Scholars will have greater clarity on research philosophy, types of research, identification, formulation and selection of research problem, hypothesis development and research design

CO 2: Research Scholars will get into insights of Data Sources, Methods of Data Collection, Sampling principles & techniques, Data analysis tools & processing and interpretation of data

CO 3: Research Scholars will get a comprehensive idea on reports writing, references and bibliography assist in arriving at discussions, suggestions and recommendations on the outcomes of the research work.

C0 4: Research Scholars will be able to formulate innovative management strategies to mitigate disasters in their respective topics

Unit I: Introduction to research

- Meaning and types in Social Science, Definition, scope and objectives and type of research; Research Philosophy
- Identification, formulation and selection of research problem; hypothesis development and research design.
- Ethics in research and plagiarism;

Unit II: Data collection

- Sources of data; types of data: primary vs. secondary; nominal, ordinal, discrete, continuous, rational and interval; remotely sensed data and various sources relevant for disaster study.
- Methods of data collection: Survey and interviews, focused group discussion, participatory and rapid rural appraisal, Questionnaire design, remote sensing: basic concepts and application in disaster studies.
- Sampling: principal steps involved; types of sampling; sampling intensity; bias, accuracy and precision; estimation of sampling error.

Unit III: Data processing and analysis

- Classification, tabulation and graphical representation of data; Scale of measurement; measure of central tendency: mean, median, mode; measure of dispersion: standard deviation, variance, coefficient of variation; normal distribution and its properties; distribution of error and confidence limits; types of abnormality: Skewness and Kurtosis; probability and probability distributions: Binomial, Poisson, Normal distributions and their application.

- Hypothesis testing; type I and type II error; expected value of mean and standard error; test of significance.
- Parametric vs Non-parametric tests; introduction to multivariate analysis; Correlation and Regression; T and F tests and its application; comparison of means and attribute test; principal component analysis and factor analysis; analysis of variance.
- Phenomenology, ethnography, case studies. Focus Groups: Discussion Guide and Approaches: observation methods and tools, content analysis; qualitative data analysis; SWOT and AHP

Unit IV: Research Report Writing

- Scientific writing: Writing thesis – layout and structure, objectives, research question review of literatures, illustrations and tables, referencing / bibliography. Communicating research to journals – types of communications (review, case study, technical note, short note, original research), layout and relevant sections, illustrations and tables, referencing.

PDM 902: Research and Publication Ethics (RPE)

Course Outcome

CO 1: This course is aimed to provide insight into various provisions of UGC Regulations 2018 (Promotion of academic integrity and prevention of plagiarism in higher educational institutions)

CO 2: To learn about various guidelines put forth under the regulations for the institution and researchers to be followed in their pursuit of the program

CO 3: To understand the philosophy of ethics, research integrity and publication ethics

Unit I: Philosophy and Ethics (3 hrs.)

1. Introduction to philosophy: definition, nature and scope, concepts, branches
2. Ethics: definition, moral philosophy, nature of moral judgements and reactions

Unit II: Scientificconduct (5 hrs.)

1. Ethics with respect to science and research
2. Intellectual honesty and research integrity
3. Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP)
4. Redundant publications: duplicate and overlapping publications, salami slicing
5. Selective reporting and misrepresentation of data

Unit III: Publication Ethics (7 hrs.)

1. Publication ethics: definition, introduction and importance
2. Best practices / standards setting initiatives and guidelines: COPE, WAME, etc.
3. Conflicts of interest
4. Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types
5. Violation of publication ethics, authorship and contributorship
6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals

PRACTICE

Unit IV: Open Access Publishing (4 hrs.)

1. Open access publications and initiatives
2. SHERPA / RoMEO online resource to check publisher copyright & self-archiving policies
3. Software tool to identify predatory publications developed by SPPU
4. Journal finder / journal suggestions tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.

Unit V: Publication Misconduct (4 hrs.)

A. Group Discussions (2 hrs.)

i) Subject specific ethical issues, FFP, authorship
ii) Conflicts of interest
iii) Complaints and appeals: examples and fraud from India and abroad

B. Software tools (2 hrs.)

Use of plagiarism software like Turnitin, Urkund and other open source software tools

Unit VI: Databases and Research Metrics (7 hrs.)

A. Databases (4 hrs.)

i.) Indexing databeses
ii.) Citation databases: Web of Science, Scopus, etc.

B. Research Metrics (3 hrs.)

i.) Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP, cite Score
ii.) Metrics: h-index, g index, i10 index, altmetrics

References

Bird, A. (2006). Philosophy of Science. Routledge

MacIntryre, Alasdair (1967) A Short History of Ethics. London

P. Chaddah, (2018) Ethics in Competitive Research: Do not get scooped; do not get plagiarized, ISBN: 978-9387480865

National Academy of Sciences, National Academy of Engineering and Institute of Medicine. (2009). On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition. National Academies Press

Resnik, D. B. (2011). What is ethics in research & why is it important. National Institute of Environmental Health Sciences, 1-10. Retrieved from http://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm

Beall, J. (2012). Predatory publishers are corrupting open access. Nature, 489 (7415), 179-179. https://doi.org/10.1038/489179a

Indian National Science Academy (INSA), Ethics in Science Education, Research and Governance (2019), ISBN: 978-81-939482-1-7. http://www.insaindia.res.in/pdf/Ethics_Book.pdf

Reading List:

1. Kothari, C.R. (2006), Research Methodology, New Age International Publishers, 2nd Edition.
2. Donald Cooper and Pamela Schindler (2006), Business Research Methods, TMGH, 9th Edition.
3. Anastasi, Anne etal. (1997), Psychological Testing, Prentice Hall, 7th Edition Black, Ken (2007), Business Statistics, Wile Black, Ken, Business Statistics: For Contemporary Decision Making, Wiley 5th Edition.
4. Malhotra, Naresh K. (2004), Marketing Research, Pearson Education Pvt. Ltd. 4th Edition
5. Zikmund, William G. (2006), Business Research Methods, Thomson, 7th Edition.
6. Broota, K. D. (2003), Experimental Designs in Behavioral Research, New Age International.
7. Singh, A. K. (2009), Tests Measurements and Research Methods in Behaviour Sciences, Bharti Bhavan.
8. Black, Ken, Business statistics: for contemporary decision making. J. Wiley & Sons, 2014.

PDM 903: Concepts of Disaster Management.

Course Outcome

CO 1: The Scholars will be able to apply comprehensive knowledge about the types, causes, mechanism of occurrence of Disaster

CO 2: The course will provide core knowledge about the Hazard, Vulnerability, Risk and Capability Assessment which will assist researchers to identify risk indicators and their quantification

Unit I: Introduction to Disaster Management

Disaster: Definition; Types of natural and human induced disasters; Disaster Management Cycle, Disaster Profile of India; Incidents of mega disasters in India

Unit II: Natural Disaster

Earthquakes, Floods, Flash Floods, GLOF, Droughts, Landslides, Avalanches, Heatwave, Lightning, Tsunami, Volcano and Cloud Bursts; Causes: Bio-Physical, Climate Change: Impacts on Infrastructure and Human Being; Structural and Non-Structural Mitigation Measures;

Unit III: Civil and Other Disasters

Industrial hazards; building collapse, stampede, road, rail, air and boat capsize disasters, urban fires, Forest fires, coal mine fires, religious congregation and terrorism related disasters, CBRN disasters; Cyber Disaster, Climate Change and Disaster; Structural and Non-Structural Mitigation Measures;

Unit IV: HVRC Assessment

Concepts of HVRC Assessment; Identifying Risk Indicators; Quantification of Risk and Vulnerability; Assessment of Vulnerability (Physical, Economic, Environmental, Social).

Case Studies

Reading List:

1. Khanna B. K. Brig (Dr.), "All you wanted to learn about disasters, "New India Publishing Agencies, New Delhi 2005.
2. Khanna B. K. Brig (Dr.), "Perils of under preparedness in Sikkim earthquake, IDSA, New Delhi, 2014
3. William H. Dennen and Bruce R. Moore, Geology and Engineering, WCB Publishers, Iowa, 1986.
4. John. M. Wallace and Peter V. Hobbs, Atmospheric Science: An Introductory Survey, Academic Press, New York, 1977.
5. Egbort Bocker and Rienk Van Grondille, Environmental Physics, John Wiley & Sons Ltd., 1999.
6. Barbar W. Murk et. Al., Environmental Physics, John Wiley & Sons
7. 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.
8. IFRC Guideline for Vulnerability and Capacity Assessment.
9. Vulnerability & Capacity Assessments, Prepare Centre. Website: https://www.preparecenter.org/topics/4-vulnerability-capacity-assessments
10. ASEAN Regional Risk and Vulnerability Assessment Guidelines; ASEAN
11. Willson, R.; and E. A. C. Crouch, 1987, Risk assessment and comparisons: An Introduction, Science 17,1987, pp 267-270.
12. Petak, W. J. and Atkisson, A, A. Natural Hazard Risk Assessment and Public Policy: Anticipating and Unexpected, Springer; New York. 1982.

PDM 904: Geoinformatics and ICT for Disaster Management.

Course Outcome

CO 1: It covers basics and principles of Remote Sensing (RS) and Geographical Information System (GIS) which is now considered as an integral part of the research specific to disaster management.

CO 2: It describes application of various GIS Tools and Techniques in all phases of Disaster Management

Unit I: Introduction to Remote Sensing (RS), GIS and GPS.

Basic and Principles of Remote Sensing, Electromagnetic Spectrum, Resolution Types, EMR Interaction, Spectral Signatures of Different Objects, Platforms and Sensors. Digital Image Processing (DIP) Techniques. Visual Image Interpretation Tools and Techniques; Basic Principles and Components of GIS, Spatial Information and Spatial Data Types; Geographic Phenomena, Geographic Field, Geographic Objects and Boundaries; Raster-Based GIS Data Processing with Both Regular and Irregular Tessellations, Vector-Bsed GIS Data Processing and Topology, Spatial Relations, Spatial Analysis. Basic and Principles of GPS, its Functions, Satellite Generation and Positioning Services. Map Projections and Coordinate Systems. Types of Survey of India (SOI) Topographical Maps, Numbering Systems and Interpretations of SOI Topographical Maps.

Unit II: Applications of Geospatial Technologies and Case Studies

Disaster management: urban, natural, manmade, coastal hazards, glacial, flood, landslides, forest fire, mining, Role of Geospatial Technologies in Watershed Management, Flood Risk Modelling, Environmental Risk Modelling, Geohazards Modelling.

Unit III: Information Technologies and Disaster Management

Concepts of Information and Data; Data Platforms for Disaster Information: Government, Private & Community Sourced; Digital Data Collection and Processing: Pre-Disaster, During Disaster and Post-Disaster Phase; Information Accessibility and Authorization Issues in Disaster Management; Real Time Data Availability: Requirements for Emergencies. Concept of Cyber Threats & Security.

Unit IV: Communication and Disaster Data Analytics

Role of Communication during Disasters; Types of Communication in case of Disasters – HAM radio, Satellite, Video Conferencing, Electronic Devices, Critical Information Infrastructure; Types of data: structured and unstructured data; Types of analytics: Descriptive, Predictive and Prescriptive, Database Management, Artificial intelligence; Guidelines on National Disaster Management Information and Communication System;

Reading List:

1. Jensen, John R. 2009. Remote Sensing of the Environment: An Earth Resource Perspective, 2nd Edition, Dorling Kindersley
2. Loseph, George. 2005. Fundamentals of Remote Sensing, 2nd Edition. University Press India.
3. Lillisand, Thomas, Ralph W. Kiefer and Jonathan Chipman. 2007. Remote Sensing and Image Interpretation. Wiley India. 18
4. Sabins, Floyd F. 2007. Remote Sensing: Principle and Interpretation. Waveland Press.
5. Jensen, John R. 2004. Introductory Digital Image Processing: A Remote Sensing Perspective. Prentice Hall.
6. Janssen, Lucas L. F., and Grrit C. Huurneman. 2001. Principle of Remote Sensing. ITC Educational Text Book series 2. International Institute of Geoinformation Science and Earth Observation (ITC). Enschede.
7. Lo, C. P., and Albert K. W. Yeung. 2009. Concepts and Techniques of Geographic Information Systems, 2nd Edition. PHI Learning.
8. Longley, Paul A., Michael F. Goodchild, David J. Maguire and David W. Rhind. 2005. Geographic Information System and Science, 2nd Edition. John Wiley and Sons.
9. Mitchell, T. M. (2017) Machine Learning. First edition, McGraw Hill Education
10. Guidelines on National Disaster Management Information and Communication System.

PDM 905: Governance of Disaster Management.

Course Outcome:

CO 1: It provides mechanism of governance under the umbrella of Constitution of India in perspective of Disaster management and Researchers will also get awareness about other related Acts, Regulations and Laws.
CO 2: It gives insight of the Institutional Framework on Disaster Management at Local, District, State and National levels.
CO 3: It describes framework of selected countries along with case studies of Institutional and Legal responses to some major world disasters in the current decade.

Unit I:

Constitution of India, Important statutes with provisions relevant to Disaster Management: Role of legislations in Disaster Management, Scope of Disaster Management Law with reference to Disaster Management Act, Essential Services Maintenance Act, Environment Protection Act, 1986, includ9ing Hazardous Substances Rules, Explosives Act, 1872, Explosive Substances Act, 1908, Atomic Energy Act, 1962, Factories Act, 1948, Petroleum Act 1934, Chemical Accident 1996.

Unit II:

Disaster Management Act 2005. National Disaster Management Plan, 2016, National Disaster Management Policy, 2009. International Initiativ es by UN, International Decade for Disaster Risk Reduction, Yokohama Strategy, Hyogo Framework for Disaster Risk Reduction (2005-2013), Sendai Framework (2013-2030); Sustainable development Goals, COP, Section 135 of Company Act 2016 India – Corporate Social Responsibility, its scope, utility and initiative taken for DRR; International Humanitarian Law & International Human Rights Law.

Unit III:

National, State, District and Local Disaster management Organizations, Role of NDRF, SDRF, Armed Forces, CAPFs; Role of Local Emergency Support Functionaries, their constitution, roles and responsibilities; Concept and Importance and Mock Drills; National and State Disaster Response Funds, Mainstreaming of Disaster management into development Plan, Corporate Social Responsibility.

Unit IV:

UN Disaster Management Cell, New Delhi; Disaster Management Framework at Select Countries, USA, UK, Japan, South Africa, Bangladesh and Indonesia. NDMA Guidelines on State Disaster Management Plan. Comparative Case Studies of Institutional and Legal responses to some major world disasters in the current decade.

Reading List:

1. Disaster Management Act 2005.
2. National DM Policy – 2009
3. Hyogo Framework for Action 2005-2015
4. Sendai Framework for DRR (2015-2030)
5. UNISDR-ARISE-2015
6. International Humanitarian Law, Larry May Bee, Banerjee, Chakka
7. Collins Larry R. and Schneid Thomas D., Disaster Management and Preparedness Taylor and Francis 2000.
8. Goel S. L. & Kumar Ram, Disaster Management, Deep & Deep Publications, 2001
9. Living With Risk: A global Review of Disaster Reduction Initiatives 2004
10. Vision, United Nations, 2004
11. Parasuraman S., India Disasters Report: Towards a Policy Initiatives, Oxford University Press, 2004.
12. Arnold, Margaret and Kreimer, Alcira (eds.), "Managing Disaster Risk in Emerging Economics", Disaster Risk Management Series No. 2, World Bank, Washington, D. C. 2000.

PDM 906: Strategic, Operations and Business Continuity Management.

Course Outcome:

CO 1: Understanding of the application of the principles, procedures of strategic management in the domain of disaster mitigation and management, strategic intent with a vision for better forecasting of disaster threats and their prevention

CO 2: It focuses on Operation Management (OM), System Perspectives of Operation Management and its relationship with other functional area.

CO 3: Understanding of Supply Chain Management, Business Continuity Planning (BCP) and Business Continuity Management (BCM) in the event of Disasters and Crises

Unit I: Introduction to Strategic Management

Understanding the application of the principles and procedures of strategic management in the domain of disaster mitigation and management. Strategic Management Processes, Understanding Strategic Intent, Vision, Mission for Better Forecasting of Disaster Threats and Their Prevention, Strategic Management of Disaster.

Unit II: Strategic Formulation, Implementation and Evaluation.

Strategic Management Methods and Tools; Strategic Analysis and Choice; Concept of Value Chain; Supply Chain Management; Monitoring and Evaluation of Stakeholders in Disaster Management.

Unit III: Introduction to Operations Management.

Nature and Scope of Operations Management; Historical Evolution of Operations Management; Systems Perspectives of Operations Management and Relationship of Operations Management with Other Functional Areas; Operations Strategy in the Domain of Disaster Mitigation and Management; Recent Trends in the Field of Operations Management.

Unit IV: Business Continuity Management.

Business Continuity / Incident Management Planning: Disaster vs Business Impacts, Developing and Exercising A Business Continuity / Incident Management Plans; Need for Establishing the Business Continuity Capability of Key Suppliers; Supply Chain Management; Change Management; Business Continuity Service Level Agreements and Contracts:

Reading List

- Kovacs and Spens (2011) Relief Supply chain Management for Disaster, IGI Global
- Tomassini and Wassenhove (2009) Humanitarian Logistics, INSEAD Business Press.
- Dangi (2014) Disaster Management: Humanitarian logistics in Relief operations. Index International, India.
- Bryman (2003) Social Research Methods Oxford University Press, UK
- Harvard Business Essential (2004) Crisis Management: Master the Skill to prevent Disasters. Harvard Business School Press.
- Fink (2000) Crisis Management: Planning for the inevitable, iUniverse
- James, E. R. (2017) Business Analytics (2 edition). Pearson Education Limited, UK
- Hult, M. G. Closs, D., Frayer, D. Global (2014) Supply Chain Management: Leveraging Processes, Measurements, and Tools for Strategic Corporate Advantage. McGraw Hill Ltd.

PDM 907: Industrial Security & Disaster Management.

Course Outcome

CO 1: Understanding the concept of Industrial Disasters, types, response plans, Safety audits and guidelines

CO 2: It let researchers aware on Principles, Threats and Emergency Management Protocols of Industrial Security.

CO 3: Learning on usage of security Gadgets, concept of data and communication security, Standard Operating Procedures, standing orders etc. during emergency.

CO 4: It covers Industrial Security Acts, Rules, Laws and Regulations

Unit I

Concept of Industrial Disasters; Types of Industrial Disasters; 'On-site' and 'Off-site' response plans of Industries; Safety Audits; SHE; Case Studies of Industrial Disasters in India; Guidelines on Chemical (Industrial) Disaster.

Unit II

Principles of Industrial Security; Physical Security Measures; Security of Building and Parking Areas; Threats to Industrial Security; Emergency Management Protocol; Procedures for Anti-Sabotage Check; Explosives & IEDs; Personnel Centre and its Functioning; Industrial Disasters and Incident Response System; Security Control Room.

Unit III

Concepts of Data and Communication Security; Types of Documents; Care & Disposal of Classified Documents; SOPs; Standing Orders; Registers to be Maintained. Communication norms / standards over radio set / mobile / landline / signaling. Use of Security Gadgets. Using Internet based Platforms for Communication & Alarms during Emergency.

Unit IV

Industrial Security & Laws: The Factories Act, 1948 (Amended) and Rules, Petroleum Act and Rules. Gas Cylinders Rules, Radiation Protection Rules, Hazardous Material Transportation Rules. The Dock Workers (Safety, Health & Welfare) Act 1996, Indian Panel Code, Private Security Agencies (Regulation) Act, Labour Act, Arms Act, ERDMP Regulations 2010, Safety Audits as per BIS 14489 (1998), HIRA 2006, Official Secret Act 1923.

Reading List:

1. William, P. L.; and J. L. Burson, 1985, Industiral Toxicology, Safety and Health Applications in the workplace, Van Nostrand Reinhold, New York.
2. R K Sinha, Industrial Security Management, Vikas Publishing
3. Chemical (Industrial) Disaster Management – 1, Trainer's Module, NIDM
4. M. Lazzaroni, V. Piuri and C. Maziero; Computer Security Aspects in Industrial Instrumentation and Measurements; 978-1-4244-2833-5/10/$25.00 © 2010 IEEE.
5. Menggang Li, Research on Industrial Security Theory; Springer.

PDM 908: Fire Safety & Disaster Risk Reduction.

Course Outcome

CO 1: Researchers get to know fundamental of Fire Engineering Science, Fire Classification, Detection and Extinguishing Methods and learn to apply suitable methods of controlling Fires

CO 2: Learning of types of Fire Control Technologies and their application in real fire situation

CO 3: Learn to apply various response mechanisms to Fire incidents

CO 4: It helps understanding Search and Rescue procedures and techniques, firefighting operations and tactics.

Unit I: Fundamental of Fire Engineering Science

Classification of Fires; Causes of Fire; Fire Detection & Extinguishing Methods; Types of Fire Fighting Equipment; Basic Chemistry & Physics of Fire; Effects of Heat on Matter; Fixed Fire Fighting Installations Using Water; Fire Hydrants; Classification of Hydrant System; Major Foam Porous System;

Unit II: Fire Control Technology

Hoses; Types of Hoses; Causes & Prevention of Rubber Acid; Components of Interlocking Couplings; Suction coupling Wrenches; Types of Nozzles; Types of Ropes & Sizes, Types of Knots & Ladders; Types of Pumps & Primers; Types of Fire Tenders & Water Relay; Open & Closed Circuit System; Fire Alarm System; Foam, Carbon Dioxide.

Unit III: Response to Fires & Other Emergencies

Role of emergency Response Team Members; Personal Protective Equipment; Fire / Emergency Response Arrangements; Incident Planning & Monitoring; Alarm Response Routines; Gaining Entrance; Movement Strategies; Adjusting & Controlling Breathing Apparatus; Effects of Heat, Smog & Poor Visibility; Maintaining Safe Means of Escape.

Unit IV: Rescue Personal & Fire Fighting Equipment

Search & Rescue Procedures and Techniques; Considerations while Evacuating; Selection of Treatment; Fire Fighting Operation & Tactics; Uses & Limitations of Fix and Portable Systems; Characteristics & Changes Associated with Gaseous Fumes, Chemicals & Other Hazardous Substances; Physiology and Effects of Respiration; Essential Features of Breathing Appratus; Choice of Actions under Different Circumstances; Tracking of Stock Levels & Supply Sources.

Reading List:

1. NDMA Guidelines on Scaling, Type of Equipment and Training of Fire Services.
2. Delhi Fire Service Act 2007 & Rule 2016.
3. A Handbook of Fire Technology by R. S. Gupta, Orient Longman 1993.
4. Fire Service Manual, UK.