

Department of Geoinformatics
School of Natural Resource Management
Central University of Jharkhand

Minutes of meeting of 4th Board of Studies (DGI on 18th Oct. 2019)

A meeting of the Board of Studies (BOS) of Department for Geoinformatics (DGI) was convened on 18th Oct. 2019 (Friday) at 11:00 am in the Office of the Head, DGI at Central University of Jharkhand (CUJ). The following BOS members were present in the meeting:

1	Prof. A. C. Pandey, Head, Department for Geoinformatics, CUJ	Convener & Chairperson Ex-Officio
2	Dr. Parul Srivastava, Vice President, IORA Pvt. Ltd., New Delhi	Member
3	Dr. Prashant K Srivastava, Assistant Professor, Institute of Environment and Sustainable Development, BHU, Varanasi	Member
4	Dr. Purabi Saikia, Assistant Professor, Department of Environmental Sciences, CUJ	Member
5	Dr. G.P. Singh, Head and Associate Professor, Department of Nano Science and Technology, CUJ	Member
6	Dr. Amit Kumar, Assistant Professor, Department for Geoinformatics, CUJ	Member
7	Dr. Kanhaiya Lal, Assistant Professor, Department for Geoinformatics, CUJ	invitee
8	Dr. Bikash R. Parida Assistant Professor, Department for Geoinformatics, CUJ	invitee

Dr. I.M. Bahuguna, Scientist 'G', Space Applications Centre, ISRO, Ahmedabad (member), Prof. S. Medhekar, Head, Department of Physics, CUJ (member) and Dr. C.S. Dwivedi, Assistant Professor, DGI (Member) could not able to attend the meeting.

Chairperson Prof. A.C. Pandey has welcomed all the members by presenting them the booky and briefed about the activities and progress of the Department. The Board of Studies (BOS, DGI) unanimously resolved the followings:

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A. Revision in Syllabus

Agenda A.1	Minor Revision in the syllabus of selected paper of PhD. Geoinformatics and M.Sc. (Geoinformatics) and change of credit Academic Field tour from Existing 2 to 3 credit.
Resolution	BOS approved the minor revision proposed in the existing syllabus of Ph.D. (Geoinformatics) and M.Sc. (Geoinformatics) and change of credit Academic Field tour from Existing 2 to 3 credit Annexure

Agenda A.2	Revision in the course structure of M.Sc. in Disaster Management and opening of center for disaster management in the Dept. of Geoinformatics for commencement of this course with additional 3-4 faculty
Resolution	BOS approved the revision in the existing course structure of M.Sc. in Disaster Management . BOS approved opening of center for Disaster Management in the Dept. of Geoinformatics for commencement of this course with additional 3-4 faculty. Annexure

Agenda A.3	Approval of the course structure and syllabus of M.Sc. in Disaster Management
Resolution	<ol style="list-style-type: none">1. The BOS reviewed the course structure and syllabus of M.Sc. in Disaster Management2. BOS approved the course structure and syllabus of M.Sc. in Disaster Management.3. The BOS committee recommended to develop a lab especially for proposed course. Annexure

B. Approval of Committees

Agenda B.1	Approval of Department level Committees
Resolution	<ol style="list-style-type: none">1. BOS reviewed the following Committees and approved the same:<ol style="list-style-type: none">a. Departmental Research Committee (DRC), DGIb. Research Advisory Committee (RAC) of all 19 PhD Scholarsc. Departmental Purchase Committeed. Departmental Project Purchase Committee (Each project funded by DST, DBT, ISRO, UGC etc.). Annexure

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Agenda B.2	Approval of Research Progress Committee (RPC) in the Department
Resolution	BOS committee recommended and approve the Research Progress Committee (RPC) in the department comprising all faculty in the department in order to review and guide the dissertation/ thesis work of UG/PG etc. during various academic sessions.

C. Admissions

Agenda C.1	Approval of admission of students in M.Sc. Geoinformatics
Resolution	BOS reviewed the list of admission in MSc Geoinformatics (2018-19 and 2019-20) and approve the same. Annexure

D. Ph.D. programme:

Agenda D.1	Approval of admission of students in PhD program
Resolution	<ol style="list-style-type: none"> 1. BOS reviewed the list of admission in PhD (Geoinformatics) of all batched including 2019-20 admission and approve the same. 2. BOS also ratified the Centre/ Department Research Committee and Research Advisory Committees of all eleven PhD Scholars and newly admitted 8 PhD Scholars during 2019. 3. The BOS members were informed about the PhD admissions/ registration during 2019-20. There were 8 PhD admissions during 2019-20. The details of newly admitted and existing PhD scholars are enclosed. 4. The BOS reviewed the recommendations of Departmental Research Committee and ratified the same. 5. The BOS reviewed the recommendations of Doctoral Committee / Research Advisory Committee of new as well as old PhD scholars and ratified the recommendation of each committee. 6. BOS recommended to award the Ph.D. degree under DGI in Geoinformatics. The advertisement of the PhD programme through CUCET or else should be in line with the concerned discipline. 7. The BOS ratified the recommendations of RAC of all PhD Scholars (2013, 2014, 2015, 2016, 2017, 2018, 2019 admissions) and CRC (CLRM/ DGI). 8. BOS Approved the coarse work allocated to each PhD scholars registered since 2013-14 to present (2019-20 batch).

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	<p>9. The BOS (DGI) approved the name of Prof. A. C. Pandey, Dr. Amit Kumar, Dr. Bikash Ranjan Parida, Dr. Chandra Shekhar Dwivedi, Dr. Kiran Jalem as eligible PhD supervisors. With reference to the File No. CUJ/DGI/2019/20 the BOS recommended to include the name of Dr. Kanhaiya Lal as he has published his 2nd paper in UGC indexed journal.</p> <p>10. The BOS (DGI) were informed regarding recent and prospective submission of PhD thesis by PhD Scholars Mr. Basheer Ahmed, Ms. Binita Kumari, Mr. Saurabh Kumar Gupta and Mr. Tauseef Ahmed (prospective submission). Members recommended the final submission of the PhD thesis and start its examination process by sending it to the experts of relevant field.</p> <p>11. BOS members recommend to extend the duration for PhD research for Ms. Binita Kumari, Mr. Saurav Gupta, who is completed five years of PhD research tenure in DGI.</p> <p>12. BOS members recommend to extend the duration for PhD research for the PhD scholars, who is completed three years of PhD research tenure in DGI.</p>
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Agenda D.2	Approval of PhD Thesis Examiner/ Evaluator for the following PhD Scholars
Resolution	<p>BOS reviewed the list of PhD Thesis Examiner/ Evaluator and approved the same for the following PhD Scholars:</p> <ol style="list-style-type: none"> 1. Ms Binita Kumari (2013-14) CUJ/P/2013/PHD/LRM/001 2. Mr. Saurabh Kumar Gupta (2014-15) CUJ/P/2013/PHDLRM/002 3. Mr. Tauseef Ahmad (2015-16) CUJ/P/2014/PHD/LRM/001 4. Mr. Basheer Ahmad KK (2015-16)CUJ/P/2015/PHD/LRM/003 <p>BOS recommended to seal the list of PhD Thesis Examiner/ Evaluator for each candidate separately to be placed before the Board of School (SNRM).</p> <p>Annexure</p>

Agenda D.3	Approval of synopsis of PhD Scholars (2018-19)
Resolution	<p>The following three PhD Scholars have presented PhD Synopsis on 1st Oct. 2019 before their respective RAC.</p> <ol style="list-style-type: none"> 1. B.S.P.C. Kishore (2018-19) 18260201001 2. Shahbaz Ahmad (2018-19) 18260201002 3. Somnath Bar (2018-19) 18260201003 <p>BOS reviewed the PhD Synopsis and approved the same.</p>

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BOS also approved the PhD Synopsis of PhD Scholars (2013-14, 2014-15, 2015-16, 2016-17 and 2018-19)

E. Integrated M.Tech (UG/PG) and M.Sc:

Agenda E.1	Approval of UG project guidelines, M.Tech. Dissertation guidelines, MSc Geoinformatics, MSc Disaster Management Dissertation guidelines as proposed.
Resolution	<p>1. BOS reviewed the UG project guidelines, M.Tech. Dissertation guidelines, MSc Geoinformatics, MSc Disaster Management Dissertation guidelines and approve the same.</p> <p>2. BOS approved the various courses of studies offered by Department of Geoinformatics, namely, M.Sc. Geoinformatics, Int. M.Tech Geoinformatics, M.Sc. Disaster Management.</p> <p>The summary of the guideline is as follows:</p> <p>a) As per the CUJ Examination requirement, IX and X semester Dissertation marks for Int. M. Tech. examination need to be distributed as 20% (periodic presentation), 60% (concise dissertation), and 20% (viva voce).</p> <p>b) In the Dept. of Geoinformatics, for IX semester (21 credits), total marks allocated is 1400. The break up marks is 280 as periodic presentation, 840 as concise dissertation, and 280 as viva voce. In X semester (21 credits), total marks allocated is 1600. The break up marks are 320 as periodic presentation, 960 as concise dissertation, and 320 as viva voce.</p> <p>c) Also, for VIII semester (Int. M.Tech.) UG Project (10 credits), total marks are allocated as 400. The marks need to be distributed as 20% (periodic presentation), 60% (concise dissertation), and 20% (viva voce). The break up marks are 80 as periodic presentation, 240 as concise dissertation, and 80 as viva voce.</p> <p>d) Following similar criterion of marks distribution for M.Sc. (Geoinformatics) dissertation in IV semester (21 credits), total marks are allocated as 800. The marks are being distributed as 20% (periodic presentation), 60% (concise dissertation), and 20% (viva voce). The break up marks are 160 as periodic presentation, 480 as concise dissertation, and 160 as viva voce.</p> <p>e) The 20% (periodic presentation) marks will be awarded by the two member committee from the department, wherein supervisor will be a member. The 60% (concise dissertation) and 20% (viva voce) marks will be awarded by an external examiner and the two member committee from the department.</p> <p>f) All students pursuing UG/PG dissertations has to submit his/ her synopsis (in hard copy + soft copy format) to the respective supervisors after allotment of supervisors within a stipulated time given. All submitted synopsis will be examined in consultation with the supervisor(s) only.</p>

	<p>g) The periodic evaluation through hard copy submission will be done during the 2nd week of October and February, whereas final presentation in person will be done during the 2nd week of December and May during M.Tech dissertation.</p> <p>h) The BoS recommended that it is mandatory to clear the UG Project (8th Semester) for a student to get promoted to M.Tech. Dissertation (9th and 10th Semester). It will also be mandatory for a student to secure minimum 40 percent of marks in 9th Semester in order to get promoted to the 10th Semester along with required attendance.</p>
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F. Lab Marks Distribution

Agenda F.1	Marks distribution and examination of Practical/ Laboratory papers in M.Sc and Integrated Program (Geoinformatics, Disaster Management)
Resolution	<p>The lab paper marks distribution has been discussed as approved with the following points:</p> <p>There is total 100 marks of each lab paper. The one time examination (sessional) of 30 marks and end semester examination of 70 marks (10 marks practical file+ 40 marks lab examination/ work + 20 marks viva voce) will be conducted. The End semester examination will be conducted by External Examiner.</p> <p>BOS approved the previous and current lab examination marks distribution and method.</p>

G. Award of Degree to Int. M. Tech and M.Sc.(Geoinformatics):

Agenda F.2	Award of degree of Int. M.Tech, MSc. in Geoinformatics
Resolution	<ol style="list-style-type: none"> 1. It is also recommended that all batch of Int. M.Tech (2013-18, 2014-19, 2015-20, and 2016-21) will be awarded with the degree of Int. M.Tech in Geoinformatics. 2. It is also recommended that all batch of M.Sc (2012-14, 2013-15, 2014-16, 2015-17, 2016-18, 2017-19, 2018-20, and 2019-21) will be awarded with the degree of M.Sc in Geoinformatics.

H. BOS approved the award of the degree of M.Sc. Geoinformatics to all the M.Sc. batches

I. BOS members discussed, agreed, and recommended that "Academic Field Tour" will remain as an essential component of the MSc (Geoinformatics), Int. M.Tech (Geoinformatics) and M.Sc in Disaster Management programmes and all the students of MSc and Int. M.Tech. Programme must be given sufficient exposure of the field covering different applied aspects.

J. BOS members recommended to improve the library with sufficient number of books as mentioned in the syllabus.

- K. BOS members strongly recommended to strengthen the laboratory facility in the Department with adequate number of workstations, 3D workstations, WETLAB, UAV, Spectroradiometer, and field data collection instruments various satellite images, aerial photographs, etc.
- L. The relevant recommendations may be submitted before the concerned Board of School (SNRM), Board of Research Studies (BRS), and Academic Council (AC).

The meeting concluded with a vote of thanks.



(Bikash R. Parida)
Asst. Professor, DGI, CUJ



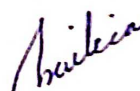
(Amit Kumar)
Asst. Professor, DGI, CUJ



(Kanhaiya Lal)
Assistant Professor, DGI, CUJ



(G.P. Singh)
Assistant Professor, DNST, CUJ



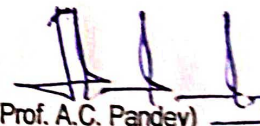
(P. Saikia)
Assistant Professor, DEVS CUJ



(Parul Srivastava)
Vice President, IORA Pvt. Ltd., New Delhi



(Prashant K Srivastava)
IESD, BHU



(Prof. A.C. Pandey)
Head, Department of Geoinformatics
School for Natural Resource Mgmt.
Convener & Chairperson Ex-Officio

Sl. No.	Name of the student	Date & No. of Registration, if any	Date of admission & Fellowship details	Topic/ Tentative are	Name of the Guide	Name of the Research Advisory Committee/ Doctoral Committee members of the student
1.	Binita Kumari	23 rd September, 2013 (2013-14) CUJ/P/2013/P HD/LRM/001	23 rd Sept. 2013 (University Fellowship)	Geospatial Modelling for Climate Change Impact Assessment on Species diversity in Palamau Tiger Reserve (India)	Prof. A.C. Pandey, Supervisor	1. Prof. A.C. Pandey, Head, DGI: Supervisor, Ex-Officio Chairman 2. Dr. Amit Kumar, Member 3. Dr. Manoj Kumar, Head, EVS: Member 4. Dr. Bhaskar Singh, EVS: Member 5. Dr. Kanhaiya Lal, DGI: Member
2.	Saurabh Kumar Gupta	25 th September, 2013 (2013-14) CUJ/P/2013/P HDLRM/002	25th Sept. 2013 (Rajiv Gandhi National Fellowship)	Geospatial approach for detection of forest canopy gaps using spectral indices and forest classification algorithms in selected forest reserves of Jharkhand (India).	Prof. A.C. Pandey, Supervisor	1. Prof. A.C. Pandey, Head, DGI: Supervisor, Ex-Officio Chairman 2. Dr. Manoj Kumar, Head, EVS: Member 3. Dr. Kanhaiya Lal, DGI: Member 4. Dr. Amit Kumar, DGI: Member 5. Dr. Purabi Saikia, EVS: Member
3.	Tauseef Ahmad	29 th August, 2014 (2014-15) CUJ/P/2014/P HD/LRM/001	29 th August 2014 (Maulana Azad Fellowship)	Geoinformatics based Flood Hazard and Risk Assessment in Kashmir Valley, India	Prof. A.C. Pandey, Supervisor Dr. Amit Kumar, Co-Supervisor	1. Prof. A.C. Pandey, Head, DGI: Supervisor & Ex-Officio Chairman 2. Dr. Manoj Kumar, Head, EVS: Member 3. Dr. Kanhaiya Lal, DGI: Member 4. Dr. Amit Kumar, DGI: Member & Co-Supervisor
4.	Satendra Kumar Chaudhary	18 th September, 2015 (2015-16) CUJ/P/2015/P HD/LRM/001	18 th Sept., 2015	Spatio-Temporal Evaluation of forest fire and forest fragmentation studies with focus on Elephant corridor and wildlife habitat	Prof. A.C. Pandey Supervisor	1. Prof. A.C. Pandey, Head, DGI: Supervisor, Ex-Officio Chairman 2. Dr. Manoj Kumar, Head, EVS: Member 3. Dr. Purabi Saikia, EVS: Member 4. Dr. Kanhaiya Lal, DGI: Member 5. Dr. Amit Kumar, DGI: Member

Details of PhD Students in the Department of Geoinformatics (18th Oct. 2019)

Department of Geoinformatics
CENTRAL UNIVERSITY OF JHARKHAND
 (A Central University established by an Act of Parliament of India in 2009)
 RATU-LOHARDAGA ROAD, BRAMBE, RANCHI- 835 205 (JHARKHAND)



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5.	Stuti	23 rd September, 2015 (2015-16) CUJ/P/2015/P HD/LRM/002	23 rd Sept., 2015 (DST Inspire Fellowship)	Drought assessment of south Kōel river basin by implementing remote sensing technologies	Prof. A.C. Pandey Supervisor	1. Prof. A.C. Pandey, Head, DGI: Supervisor, Ex-Officio Chairman 2. Dr. Manoj Kumar, Head, DEVS: Member 3. Dr. P.K. Parida, CAM: Member 4. Dr. Kanhaiya Lal, DGI: Member 5. Dr. Amit Kumar, DGI: Member
6.	Basheer Ahmad KK	28 th September, 2015 (2015-16) CUJ/P/2015/P HD/LRM/003	28 th Sept., 2015 (University Fellowship)	Coastal multi hazard vulnerability assessment using geoinformatics	Prof. A.C. Pandey Supervisor	1. Prof. A.C. Pandey, Head, DGI: Supervisor, Ex-Officio Chairman 2. Dr. Manoj Kumar, Head, DEVS: Member 3. Dr. P.K. Parhi, DWEM: Member 4. Dr. Kanhaiya Lal, DG: Member 5. Dr. Amit Kumar, DGI: Member
7.	Diksha	14 th September, 2016 (2016-17) CUJ/P/2016/PH D/LRM/01	14 th September, 2016 (DBT Project Fellowship)	Subject area: Urban Hazards and Risk	Dr. Amit Kumar Supervisor	1. Prof. A.C. Pandey, Head, DGI: Ex-Officio Chairman 2. Dr. Amit Kumar, DGI: Supervisor & Member 3. Dr. P.K. Parhi, DWEM: Member 4. Dr. Kanhaiya Lal, DGI: Member
8.	Gaurav Tripathi	(2016-17) CUJ/P/2016/PH D/LRM/02	14 th September, 2016 (NISAR ISRO HYD 03 Fellowship)	Subject area: Flood Hazards and Risk	Prof. A.C. Pandey Supervisor Dr. Bikash Parida, Co-Supervisor	1. Prof. A.C. Pandey, Head, DGI: Supervisor, Ex-Officio Chairman 2. Dr. Bikash Parida, DGI: Co-Supervisor 3. Dr. Amit Kumar, DGI: Member 4. Dr. Manoj Kumar, Head, EVS: Member 5. Dr. Kanhaiya Lal, DGI: Member
9.	B.S.P.C. Kishore	(2018-19) 18260201001	11 th September, 2018 (AVIRIS Mudumalai ISRO Fellowship)	Mapping and Quantitative Assessment of Forests in Changing Climatic Scenario: A Case Study in Parts of Nilgiri Biosphere Reserve	Dr. Amit Kumar Supervisor	1. Prof. A.C. Pandey, Head, DGI: Member, Ex-Officio Chairman 2. Dr. Amit Kumar, DGI: Supervisor & Member 3. Dr. Bhaskar Singh, DEVS: Member 4. Dr. B.R. Parida, DGI: Member 5. Dr. C.S. Dwivedi, DGI: Member

Details of PhD Students in the Department of Geoinformatics (18th Oct. 2019)

RATIL CHARDAGA ROAD, BRAMBE, RANCHI- 835 205 (JHARKHAND)



Details of PhD Students in the Department of Geoinformatics (18th Oct. 2019)

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18.	Subhas Garai	(2019-20) 19260201007	9th August, 2019 (NISAR ISRO Eco-17 Fellowship)	Vegetation studies and SAR	Dr. Kanhaiya Lal Supervisor	1. Prof. A.C. Pandey, Head, DGI: Ex-Officio Chairman 2. Dr. Kanhaiya Lal, DGI: Supervisor & Member 3. Dr. Amit Kumar, DGI: Member 4. Dr. Purabi Saikia, DEVS: Member 5. Dr. C.S.Dwivedi, DGI: Member 6. Dr. B.R.Parida, DGI: Member
19.	Swetabh Kamal Choudhary	(2019-20) 19260201008	19th August, 2019 (University Fellowship)	Geology & mineral exploration	Dr. C.S. Dwivedi Supervisor	1. Prof. A.C. Pandey, Head, DGI: Ex-Officio Chairman 2. Dr. Kanhaiya Lal, DGI: Member 3. Dr. Amit Kumar, DGI: Member 4. Prof. S. K. Samdarshi, Head, DEE: Member 5. Dr. C.S. Dwivedi, DGI: Supervisor & Member 6. Dr. B.R. Parida, DGI: Member

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Department of Geoinformatics
Central University of Jharkhand

Date: 18th Oct. 2018

The eligible supervisors for PhD research in the Department of Geoinformatics are as follows:

1. Prof. A. C. Pandey, Professor
2. Dr. Amit Kumar, Assistant Professor
3. Dr. Kanhaiya Lal, Assistant Professor
4. Dr. Bikash Ranjan Paraida, Assistant Professor
5. Dr. Chandra Shekhar Dwivedi, Assistant Professor
6. Dr. Kiran Jalem, Assistant Professor

Amit
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Parida

Kanhaiya

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Sudha

M.Sc. DISASTER MANAGEMENT

(Revision 1)



**DEPARTMENT OF GEOINFORMATICS
CENTRAL UNIVERSITY OF JHARKHAND
BRAMBE, RANCHI 835205**

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COURSE STRUCTURE FOR M.Sc. DISASTER MANAGEMENT

	CODE	PAPERS	Course Type	Credit					
SEMESTER I				L	T	P			
Theory & Lab		Fundamentals of Disaster Management	Foundation C	2	1	0			
		Disaster Management Laws, Policy & Planning	Foundation C	2	1	0			
		Climate Change and Disaster	Core Course	2	1	2			
		Fundamentals of Geospatial Technology	Core Course	2	1	2			
		Statistical Methods	Foundation C	2	1	2			
SEMESTER II									
Theory & Lab		Urban Disaster Risk Assessment	Core Course	2	1	2			
		Numerical Weather Prediction In Disaster Management	Core Course	2	1	0			
		Geoenvironmental and Hydro-meteorological Hazards	Core Course	2	1	2			
			Swayam	2	1	0			
		CBCS/ ELECTIVE 2	CBCS /E1	2	1	0			
SEMESTER III									
Theory & Lab		Geospatial Modelling and Computational Techniques		2	1	2			
		Advances in Disaster Monitoring Techniques		2	1	2			
		Disaster Risk Assessment and Mitigation		2	1	2			
		ELECTIVE 2/ CBCS	CBCS/ EI-2	2	1	0			
		Academic Field Tour		3					
SEMESTER IV									
		RESEARCH PROJECT / THESIS		21					
	LIST OF ELECTIVES –I					LIST OF ELECTIVES –2			
Theory & Lab		Lightening and Forest Fire Hazards	2	1	0	Earthquake Hazards	2	1	0
		Flood Hazards	2	1	0	Landslide Hazards	2	1	0
		Cyclonic Hazards	2	1	0	Industrial Hazards	2	1	0
		Drought Hazards	2	1	0	Coastal Hazards	2	1	0
* A Field Tour of at least 2-3 weeks will be organised in any parts of India to give sufficient exposure to the students.									

* A Field Tour of at least 2-3 weeks will be organised in any parts of India to give sufficient field exposure.

** Indicates corresponding Labs

NOTE: Students have to select one elective from each group and give option by the end of 2nd semester.

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SEMESTER I

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FUNDAMENTALS OF DISASTER MANAGEMENT

Unit-I Introduction to Disasters

- Concepts and definitions (disaster, hazard, vulnerability, risk, capacity)
- Environmental origins/background of disasters, Humanitarian aspects
- Evolution of disaster management
- Communication, dissemination and awareness generation, Mock drill

Unit-II Disasters: Classification, Causes, Impacts

- Approaches of disaster classification (Natural and Anthropogenic)
- Causes (social, economic, political, environmental, health, psychosocial)
- Differential impacts- in terms of caste, class, gender, age, location, disability
- Global trends in disasters: urban disasters, pandemics, emergencies

Unit-III Approaches to Disaster Risk Reduction

- Disaster management cycle – Analysis, Phases, Culture of safety
- Prevention, mitigation and preparedness; Ecosystem approach to DRR, Community based DRR, Structural and non-structural measures,
- Role of EIA, Risk analysis, Vulnerability and Capacity assessment.
- Roles and responsibilities of government, community, Panchayati Raj Institutions/Urban Local Bodies (PRIs/ULBs), Hospitals and School; Role of doctors, paramedical, electricians and other stakeholders.

Unit-IV Relief, Response and Disaster Recovery

- Search and Rescue (SAR), First aid, Shelter management, drinking water, electricity
- Post-disaster environmental response (water, sanitation, food safety, waste management, disease control), Environmental problems of Rehabilitation –Microfinance – NGO's role.
- Disaster Recovery -Basic principles, planning steps; disaster recovery among stake holders
- Sustainable recovery and reconstruction.– role of IT, RS, GIS –Budget for disaster recovery
- Policies and legislation for disaster risk reduction, plans, programmes (NDMA, NDRF)

Unit-V Inter-relationship between Disasters and Development

- Factors affecting vulnerability, differential impacts
- Impact of developmental projects and environmental modifications (including of dams, embankments, land-use changes, etc.)
- Green disaster management, Relevance of indigenous knowledge, appropriate technology and local resources

Unit-VI Disaster Risk Management in India

- Hazard and vulnerability profile of India, vulnerability Atlas of India.
- Institutional arrangements (Prevention, Mitigation, Preparedness, Response and Relief)
- Case Studies (Tsunami 2004, Kosi calamity, Mayapuri radiation exposure, etc)

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Unit-I Introduction

- Concept of disaster management and its requirement
- Need of Laws, Policy and Planning for disaster management
- Role of Govt. in creating laws/regulations and implementation of management plans
- Evolution and early roots of disaster management institutions and policies

Unit-II International Disaster Response Laws (IDRL)

- International laws/policies for disasters and armed conflicts, IFRC, IDRL
- Main sources of IDRL- Treaties, International custom, UN Resolutions, IDRL guidelines
- Declaration of emergency and requests for international assistance
- Problems in IDRL- Initiation/barriers to entry, Legal facilities for operation, Regulation of co-ordination and quality; Recent developments in IDRL

Unit-III Disaster Management Laws and Policies in India

- NDMA- Structure, Functions & Responsibilities, Policy, Organizations (NDRF, NIDM)
- Policies and Acts- Disaster Management Act 2005, National Policy on Disaster Management 2009
- Guidelines of Govt. on disaster management- School safety policy, management of heat wave, urban flood management, adventure tourism guidelines

Unit-IV National Disaster Management Plan (NDMP)

- Objectives, salient features of the plan,
- Sendai framework- priorities of action, integration into NDMP
- Civil defense structure and policies in India, Civil defense volunteer
- Relief Measures by banks in areas affected by Natural Calamities, RBI directions

Unit-V International Charters, GIS Volunteers

- International Charter Space and Major Disasters: History, Benefits, Members, partners
- How charter works: Activating the charter, Mechanisms, Functions, Product/Information
- Crowdsourcing: GIS Corps/Volunteers, Organizing Principles and policies, how it works
- GIS service pledge, Role of GIS volunteer at time of disaster

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Dr. K. S. Srinivasan

Unit –I MONSOON, CLIMATE CHANGE & GLOBAL WARMING

- Fundamental concepts, distribution of monsoonal circulation around the world, Origin, advancement and retreat of Indian Monsoon
- Monsoon depressions, tropical easterly jet stream, low level jets, Somali jet, waves in easterlies, western disturbances
- Weather and climate, Energy Balance, Drivers of Climate change
- Climate change, theories, and indicators, Greenhouse gases
- Global warming, causes and consequences
- Geoinformatics in monitoring climate change and global warming

Unit –II FUTURE CLIMATE CHANGE

- Climate change and disaster
- Extreme weather events (Heat, Storms, Floods)
- Projection of climate change
- Global circulation models (GCMs)

Unit –III MITIGATION AND ADAPTATION

- Mitigation and adaptation Disaster risk reduction in the
- UNFCCC process
- Climate Change Policy Framework (Kyoto, UNFCCC, IPCC)
- Climate change from national perspectives

Unit –IV CLIMATE RESILIENCE

- Climate Resilience in Disaster Risk Reduction (CRDRR)
- Setting Context for the CRDRR approach in DM plans
- Climate Change Adaptation (CCA) and DRR in India
- State Action Plan on Climate Change
- State Disaster Management Plan

Unit –V DISASTER RISK REDUCTION (CRDRR)

- Achieving Climate Resilience in Disaster Risk Reduction (CRDRR)
- Participatory Vulnerability and Risk Assessment
- Integrate Risks within Strategies, Plans and Regulations
- Pilots Measures: Paradigms of Adaptation Strategies

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Unit-I BASIC PRINCIPLES AND SATELLITE SYSTEMS

Electromagnetic Radiation (EMR): Wavelength regions and their applications Atmospheric windows, Interaction of EMR with atmosphere & Earth's Surface, Spectral response pattern, Geostationary & Sun Synchronous Satellites, Resolutions- Spectral, Spatial, Temporal and Radiometric, Earth Resource Satellite Sensors, Advances in remote sensing technologies: Thermal, RADAR, Microwave, Hyperspectral, Lidar etc.

UNIT II: GEOGRAPHIC INFORMATION SYSTEM

Basic concepts about spatial information, Spatial vs. non-spatial data, Components of GIS, Spatial data models – Raster and Vector, Data base design - editing and topology creation in GIS, Linkage between spatial and non-spatial data, Integration of Raster & Vector Data, Feature Based Topological functions, Interactive Data Exploration, Vector Data Query, Attribute Data Query

UNIT III: CARTOGRAPHY & GLOBAL POSITIONING SYSTEM

Introduction to cartography, Map and Scale, Important Map Projections, Generalization- Elements, Control & Classification (Semantic & Geometric), Introduction to Global Positioning System, GPS Segments, GPS Positioning Types- Absolute, Differential, Geopositioning, GNSS: NAVSTAR, GLONASS, GALILEO etc.

UNIT IV: REMOTE SENSING APPLICATIONS

Brief introduction to Remote Sensing (RS) Applications: Agriculture, Forestry, Land cover/ Land use, Water resources, disaster management- floods, landslide, cyclone, forest fire, drought & Environmental Impact Assessment (EIA)

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Unit I: Data Representation, Sampling & Correlation

- Data, types and scale of measurement; Frequency distribution, diagrams and time series graph, Central tendency, location, dispersion, Skewness, Kurtosis & Moments
- Sampling: techniques, types, applications and errors.
- Correlation: Simple, Rank and partial.

Unit II: Fundamental Probability and Regression

- Concept of Probability, Laws of probability
- Probability distribution, Binomial, Poisson and Normal distribution
- Curve Fitting: Simple linear regression, multiple regressions, non-linear regression

Unit III MATRIX & MULTIVARIATE ANALYSIS

- Matrix, Inverse matrix, Correlation matrix, variance and covariance matrix.
- Eigen values and Eigen Vectors, Mean vector
- Multivariate techniques, Principle component analysis

UNIT IV: STATISTICAL INFERENCE

- Statistical Hypothesis and testing, Testing of population means
- T test, F-test and Chi-Square.
- Analysis of variance: One way and two way analysis of variance test.

Unit -V IMAGE ANALYSIS USING R

- Basic syntax, Loop Functions and Debugging
- R Statistics examples (Pearson correlation and simple linear regression)
- R-programming for Remote Sensing and GIS Data
- Big data analysis using R (CRU netcdf climate data, hdf modis data)
- R charts & R Graphics for Raster/Vector Data

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SEMESTER II

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URBAN DISASTERS RISK ASSESSMENT

UNIT 1: BASIC OF REGIONAL AND URBAN PLANNING

- Definition and concept of urban, rural settlement: cause and effects;
- Urban land use theories, Urban life cycle/ growth theories,
- Scale and Resolution concepts, Visual and Digital Data Analysis Techniques
- Scope and limitations of remote sensing application to urban and regional planning.
- Image interpretation and analysis for urban mapping

UNIT 2: PERSPECTIVES OF URBAN DISASTERS

- Urbanization and Hazard, Vulnerability & Risks, Interface between Urban Development and Disaster Risks
- Urban Disaster Risks: Perspectives & Approaches
- Understanding Risk of Urban Elements; Urban Risk Reduction
- Identifying Risks & Vulnerabilities in the Urban Context:

UNIT 3: URBAN DISASTER: ISSUES & CONCERNS

- Urban Disaster Impact and Role of Urban Planning for Risk Mitigation, Socio Economic Impacts, Physical and Environmental Impacts
- Implications of Urban Transport in Disaster Risk Reduction
- Health Issues for Urban Disasters
- Climate Change and Urban Risks: Impact for Present and Future, temperature and rainfall trends and urban area

UNIT 4: URBAN DISASTER - RISK ASSESSMENT AND GEOINFORMATICS

- Urban hazards: extreme weather events, floods, heat waves, earthquake, cyclones,
- Environmental pollution: ambient air, ambient noise, surface water quality, UHI
- Groundwater quality and quantity: drinking water shortage, slums, solid waste management
- Degradation of urban greening and ecological diversity, fragmentation, Urban sprawl
- Hazard Risk Vulnerability Analysis (HRVA)
- Risk Assessment, Vulnerability Analysis and Mitigation Strategies

UNIT 5: STRATEGIES FOR URBAN DRR and BUILDING RESILIENT CITIES

- Urban hazard zonation and risk assessment, Risk Sensitive Planning
- Technology for Urban Sustainability: RWH, Grey water reuse, urban Greening, Green roofing,
- Traffic management, Smart growth, sustainable development
- Framework for Resilient Cities: diversity in urban ecology,
- Instruments for Implementation of Disaster Risk Reduction, Community based Urban Risk Management
- City Disaster Management Plan

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1. Introduction

History of NWP

NWP processes and components

2. Fundamentals of NWP models,

model fundamentals, structures, dynamics, physical parameterization,

Governing equations

Filtering and scaling

Vertical coordinates

Numerical methods to solve PDEs

Model type, resolution and boundary conditions

3. Physical processes and parameterizations

Subgrid-scale processes

Overview of model parameterizations

4. Introduction to data assimilation and ensemble forecasting

5. Examples of operational NWP

6. New developments: An introduction to machine learning

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Unit I: Introduction

- Fundamental concepts of environmental hazard, air quality (dust, nitrous oxide, nitrogen dioxide, ozone, sulfur dioxide), land degradation, soil contamination, water pollution
- Sources of aerosols (e.g. pollution from factories, smoke from wildfires and biomass burning, dust from dust storms, sea salt, volcanic ash, smog), effects of aerosols (on humans, weather and climate)
- Damage assessment

Unit II: Air Quality Mapping and Modeling

- Sensors and instruments for mapping aerosol, ash plumes (sunphotometer, MODIS, NASA Ozone Monitoring Instrument, NASA Ozone Mapping and Profiler Suite, Geostationary Operational Environmental Satellite East Aerosol/Smoke Product (GOES GASP etc.)
- Mapping aerosol index, aerosol optical depth, measuring carbon monoxide and pollutants (MOPITT Terra, AIRS Aqua, AIRS dust score etc.), Vulnerability mapping
- Aerosol climate models (Community Climate Model CCM1, GISS, ECHAM, GRANTOUR and ULAQ models etc.)
- Risk modeling approaches (Statistical modeling etc.)

Unit III: Land degradation and soil contamination

- Causes of land degradation (desertification, deforestation, water logging, salinization, soil erosion, droughts, floods, climatic variations etc.)
- Use of multi-temporal datasets for monitoring land degradation (NOAA AVHRR, Landsat, SPOT, QuickBird, GeoEye- 1, Worldview-1 & 2 etc.)
- Soil erosion and desertification assessments (RUSLE, SWAT, Runoff modeling etc.)
- Risk assessment through modeling and decision support system
- Types of land and soil conservation practices and management

Unit IV: Water contamination

- Sources of surface and groundwater contamination (Industrial, municipal, domestic etc.), impacts, water quality parameters (water quality index etc.)
- Arsenic and fluoride contamination in groundwater (their sources and impacts)
- Water contamination monitoring using geoinformatics (DRASTIC model etc.), Groundwater models (GRASS etc.)
- Statistical analysis (climate related variations, anomalies, trends etc.)
- Risk assessment through decision support system
- Water conservation measures

Unit V: Geoinformatics based environmental modeling

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SEMESTER III

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UNIT I: INTRODUCTION TO PYTHON

- Why use Python and Open Source, Basic structure of a Python Code
- Concept of OOPs, Variables, Datatypes: Boolean, Numeric, Strings,
- Data structure: List, Tuples, Sets, Dictionaries

UNIT II: PYTHON PROGRAMMING

- Control flow: if, while, for, break, continue, rise;
- Inputs and outputs, reading, writing and printing objects; Functions, Classes
- Using modules, Exceptions, Writing modules

UNIT III: GEOPROCESSING WITH PYTHON

- Types of spatial Data, Reading, writing and updating vector data, Intro to OGR
- Working with different file formats : shapefiles, geoJSON, PostGIS, SpatialLite
- Filtering data, manipulating geometries, vector analysis using OGR
- Spatial reference system, working with raster data, map algebra, classification & visualization

Unit -IV DATASETS OF GEE

- Introduction to GEE, Sign Up to GEE, Explore Datasets of GEE
- Satellite Datasets of GEE - The Catalog and the Code Editor
- Basic JavaScript Programming for GEE

Unit -V IMAGE ANALYSIS USING GEE

- Import Image Collections
- Display Images, a Landsat example
- Feature Collection and Vector Data
- GEE for Raster Data Processing and applications
- GEE for GIS Data Processing and applications

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Unit I: Understanding Disaster Monitoring

- Understanding disaster monitoring, importance of disaster monitoring
- Sources of information for disaster monitoring
- Approaches to disaster monitoring: regional approach, system approach, model approach

Unit II Geoenvironmental Modelling

- Understanding geo-environmental model, general steps involved in modeling disaster, model components, equations, input parameters and model implementation
- Classification of model: Deterministic Models, Stochastic Models, Dynamic Models, Steady State Models
- Different types of environmental models: Mass Balancing Model, Energy Balancing Model,
- Uncertainty in the model, Uncertainty in model outputs, Uncertainty due to Parameter Errors, Input Data and Equation Errors, Model Uncertainty and Sensitivity Analysis: Monte Carlo simulation, Model Validation and Calibration.

Unit -III DIGITAL IMAGE ANALYSIS

- Digital image, histogram, Image data formats and retrieval, Sources of digital image degradation,
- Pre-processing: Atmospheric, Radiometric and Geometric corrections
- Radiometric enhancement techniques, Contrast stretching: Linear and non-linear methods

Unit -IV IMAGE CLASSIFICATION

- Spatial and Spectral enhancement techniques
- Classification, feature space, hard classification techniques: Unsupervised & Supervised, Accuracy assessment
- Soft classification techniques: Fuzzy, NN, ANN, Sub pixel classification.
- Image segmentation, object oriented classification

Unit -V ADVANCE SENSORS AND DISASTER ASSESSMENT

- RADAR image processing,
- Hyperspectral image processing,
- LiDAR image processing

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Unit I Basic Concepts

- Basic concepts of hazard, disaster, vulnerability(human: physical, socio-economic, age and gender specific; animals; physical infrastructures, etc.), risk, capacity and resilience
- Risk management framework, Risk assessment process, Risk based decision-making
- Risk matrix and its merits and limitations

Unit II Disaster Risk Assessment

- Risk analysis- Hazard identification, Threat assessment, Vulnerability assessment, Impact Assessment
- Risk Evaluation- Concern assessment, Situation assessment
- Risk Treatment- Prevention, Reduction, Transfer, Retention
- Key requirements for cost effective risk reduction, levels of decision making, levels of risk assessment

Unit III Disaster Risk Assessment Project Design

- Scope and Context, Implication on DRA, Target Groups, Partners and Stakeholders
- Implementation Strategies, Typical outputs, Indicative Activities
- Specific M&E Considerations, Useful tools and resources
- Case studies for DRA Project design

Unit IV Disaster Mitigation

- Concept and significance of disaster mitigation, guiding principles and tools of disaster mitigation
- Disaster mitigation approaches(structural and non-structural), mitigation strategies with respect to specific disaster(cyclone, drought, floods, earthquake, etc.), Government initiatives for disaster mitigation
- Emerging trends in disaster mitigation: sustainable development, sustainable land use planning, Environmental Impact Assessment(EIA), ecosystem services, social-cost benefit analysis approach, epidemiological surveillance, coastal zone management
- Policy areas in disaster mitigation(short run and long run), disaster mitigation and team work, disaster management framework in India, conflict resolution concept and techniques, media management

Unit V Early Warning System

- Concept and importance of early warning system, components of early warning system
- Communication of early warning, community based early warning, use of ICT in early warning system, multi-hazard early warning system, disaster early warning and policy
- Early warning system in India (Tsunami, Cyclone, Flood, Forest fire, Extreme weather events, etc.)









The Centre will organize a Field Tour within the territory of India normally of two to three week duration to give sufficient in situ field exposures concerning geomorphological and geological hazards, climatic and fluvial hazards, wildfire based hazards, etc. and visiting institutions of eminence working in the field of disaster risk assessment and mitigations. Based on the field visit, all students are required to prepare a comprehensive Field Report which will be evaluated by expert.

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ELECTIVES PAPERS

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GEOLOGICAL HAZARDS

UNIT 1:

- Earthquake,
- Landslide,
- Glacial hazards,
- Volcanic hazards,
- Mining hazards: land subsidence, mine flooding, coal mine fire.

UNIT 2: Earthquake and Landslide Hazards

- Concept of Earth System (Earth Interior), Plate Tectonics Theory and its relationship to earthquakes and volcanic activity, Distribution pattern (Global and Indian context)
- Use of sensors and instruments for monitoring earthquakes (IKONOS, QuickBird, SAR Interferometric techniques etc.), Hazards caused by earthquakes (Dam bursts, landslides etc.), Vulnerability and risk assessment
- Sensors and instruments for mapping and monitoring landslides (optical, LiDAR, SAR etc), Vulnerability and risk assessment
- Case Studies: Landslides in Himalayan, western ghats, Earthquakes in Himalayan belt

UNIT 3: Glacial Hazard

- Causes and triggering factors, consequence, and mitigation measures, impact of climate change
- Use of multi-temporal datasets for monitoring glaciers (Mass balance measurements, area changes etc.), Avalanche monitoring and mapping, Glacial Lake Outbursts mapping (Optical and microwave remote sensing)
- Hazard and Risk assessment through modeling and decision support system, Statistical analysis (climate related variations, anomalies, trends etc.)
- Case Studies: GLOF in Himalayas

UNIT 4: Volcanic Hazard

- Causes (triggering factors), distribution pattern (Global and Indian context), consequence, and mitigation measures
- Sensors in monitoring volcanoes (EO-1, NOAA Geostationary Operational Environmental Satellite (GOES), MODIS, ASTER etc.)
- Risk modeling and assessment through decision support system
- Case studies: Volcanic eruptions in Andaman

UNIT 5: Mining Hazard

- Causes (triggering factors), distribution pattern (Global and Indian context), consequence, and mitigation measures, active mine fire detection, thermal anomaly etc.
- Sensors in monitoring mine fires (Thermal remote sensing etc.), Implications for air quality, health and climate
- Risk modeling and assessment through decision support system
- Case studies: Coal fire and subsidence in Jharia etc.

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Unit I: Introduction

- Fundamental concept of floods
- Types (Flash, Riverine, Urban, Coastal, GLOF, ice Jam etc.)
- Causes of flooding, Damage assessment
- Consequences of flood to the environment (water contamination, diseases etc.)

Unit II: Flood Hazard Mapping and Modeling

- Mapping flooded area using remote sensing, GIS and GPS, various sensors in disaster assessment (SAR, NASA LANCE data, MODIS, VIIRS Land surface reflectance etc.), Vulnerability mapping
- Forecasting methods (monitoring precipitation extremes, reservoir inflow, soil moisture estimation, sea level rise etc.)
- Flood risk modeling and projections of climate change impacts
- Case studies (Kedarnath 2013 flood, kosi flood 2008, Kashmir flood 2014, Kerala flood 2018 etc.)

Unit III: Flood Disaster Management

- Types of control practices and management (Wetland restoration, flood levees, reservoir management etc.)
- Role of union/states, role of armed forces/other agencies in disasters, existing structures and authorities (International and National), Important Statutes/ Legal Provisions
- Government policies on flood risk management
- Role of organizations like NDRF, NGO's etc.

Unit IV: Flood Disaster Mitigation

- Early warning systems (weather prediction models, reservoir storage change and outflow, sea level rise, use of SAR data, assessments and knowledge of flood risks, local hazard forecasts and warning, flood risk dissemination and communication etc.)
- Structural Measures
- Recovery and rehabilitation measures

Unit V: Post-Flood Measures

- Risk knowledge (Establish a system/agreement to collect and share data, figures, maps, etc. on flood risks and vulnerability)
- Monitoring and warning service (Establish sensors measuring water levels and link them to the local database)
- Dissemination and communication (Dissemination roles and responsibilities e.g. media, governance institutions, NGOs)
- Response capability and community preparedness (Education, through information centers or training and workshops including warnings and understanding of risks for community disaster preparedness)
- Environmental Benefits (Giving timely notice for gated dam water release, reducing damage to surrounding communities and ecosystems)

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Unit I: Earthquakes and Seismotectonics: Earthquake, types and origin. Locating an earthquake. Fault Plane Solution and Stresses, Rupture dimensions and displacement. Seismic features of the Earth's Core and Mantle, Longitudinal and transverse waves. Earthquake and plate tectonic.

Unit II: Measures of earthquake size, intensity, severity of an earthquake and a locality Seismic movement: Size of the earthquake at source. Magnitude: Measure of Earthquake size, Energies of earthquake. Global Seismology, Seismic perspective for Indian region. Reservoir Induced Seismicity.

Unit III: Earthquake Induced Hazards: Landslides, Tsunami, volcanism, flash flood. Damage caused by earthquakes: Building and Bridges collapse, Dams and Embankment breach, Earthquake damage and its mitigation. Causes of damages, mitigating the damages caused by Earthquakes, Seismic zones map of India, EQ Hazard vulnerability, Damage risk zones,

Unit IV: Geoinformatics in Earthquake Studies: GPS and DGPS measurements, Continuous GPS Deformation Monitoring Networks, Geodatic surveys, SAR Interferometry, Thermal Imaging, Meteorological Observation, Optical satellite based damage assessment, EQ Risk assessment. Seismic tomography

Unit V: Earthquakes prediction: Geological, seismic, Statistical and physical measurements, Long-term techniques (Paleoseismology, Seismic gaps), Short-term techniques (Foreshocks, Measurable surface displacement, groundwater levels etc). Early Warning, Trend in EQ hazards mitigation: Community Training / Awareness, Vulnerability Assessments, Retrofitting of weak Structures, Use of Space Technology, Disaster Information Systems.

Unit VI: Geoinformatics Applications and Case studies: Tsunami 2004, Gujarat Earthquake 2001, Uttarkashi EQ 1993, Nepal EQ 2013.

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SEMESTER IV

MGI 441010

PROJECTS /THESIS

Synopsis consisting of relevance of the problem to be studied and its aims and objectives, Methodology adopted to study such problem.

- Chapter Scheme
- Review of Literature
- Preliminary base work carried out
- Presentation

On satisfactory completion of the taught component of the course, students will normally proceed to the M.Sc. Research Dissertation which must be completed by the end of Fourth Semester. This should be a substantial piece of research work, which both reinforces the skills learned in the taught component of the course and provides a genuine opportunity to undertake valuable research. Each student is required to defend his/ her thesis through a presentation in front of an external expert and faculty and students.

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**Department of Geoinformatics
Central University of Jharkhand**

Proposed PhD Thesis Examiners / Evaluator

Name of PhD Scholar : Saurabh Kumar Gupta
Registration no : CUJ/P/2013/PHD/LRM/002
Topic of PhD : Forest Change and Fragmentation Analysis using Advanced Geospatial Technology in Hazaribagh Wildlife Sanctuary, Jharkhand, India
Supervisor : Prof. A.C. Pandey

Examiner's details

Sl. No	Name	Designation	Contact Details	Research Area	Department	Institute
1	Prof. M.L. Khan	Professor	khanml@yahoo.com	Forest Ecology, Ethnobotany, Plant Resource Management, Ecosystem Services, Conservation Biology, Biodiversity Conservation, Environmental Science	Department of Botany	Dr. Hari Singh Gour Central University, Sagar
2.	Prof. Rajendra Prasad	Professor	rprasad.ap@iitbhu.ac.in	Satellite Image Processing/Image Analysis for earth resource monitoring and for studying land use land cover changes	Department of Physics Engineering	IIT (BHU)
3.	Dr. Kiranmay Sharma	Associate Professor		Spatial analysis, mapping, remote sensing, GIS	School of Environment Management	Guru Gobind Singh Indraprastha University
4.	Prof. (Mrs.) G. Sandhya Kiran	Professor & Head	Sandhyakiran60@yahoo.com	Plant Physiology, Plant Biology, Plant Biotechnology	Department of Botany	The Maharaja Sayajirao University of Baroda, Vadodara,
5.	Dr. Varun Joshi	Associate Professor,	varunj63@gmail.com	Environmental Impact Assessment, Climate Change, Rivers, Natural Hazards	School of Environment Management	Guru Gobind Singh Indraprastha University,
6.	Dr. Om Prakash Tripathi	Associate Professor	tripathiom7@gmail.com; opt@nerist.ac.in	Forest Ecology and Biodiversity and Conservation, Remote Sensing and GIS application in Forestry	Department of Forestry	North Eastern Regional Institute of Science and Technology, Nirjuli, Arunachal Pradesh

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**Department of Geoinformatics
Central University of Jharkhand**

Proposed PhD Thesis Examiners / Evaluator

Name of PhD Scholar : Binita Kumari

Registration no : CUJ/P/2013/PHD/LRM/001

Topic of PhD : Spatio-Temporal Assessment of Forest Transformation in Palamau Tiger Reserve (India) using Geoinformatics

Supervisor : Prof. A. C. Pandey

Examiners' details

Sl. No	Name	Designation	Contact Details	Research Area	Department	Institute
1	Prof. Rajendra Prasad	Professor	rprasad.ap@iitbhu.ac.in	Satellite Image Processing/Image Analysis for earth resource monitoring and for studying land use land cover changes	Department of Physics Engineering	IIT (BHU)
2.	Dr. Arun Singh Rawat	Director FRI, Vice Chancellor FRI university,	dir_fri@icfre.org	Forestry research/ Indian Forest	FRI University	FRI, Indian Council of Forestry Research Education, Dehradun
3.	Dr. B.S. Chaudhary	Professor	bsgeokuk@yahoo.com	Remote Sensing & GIS, Hydrology, Electrical Prospecting	Department of Geophysics	Kurukshetra University
4.	Prof. (Mrs.) G. Sandhya Kiran	Professor & Head	Sandhyakiran60@yahoo.com	Plant Physiology, Plant Biology, Plant Biotechnology	Department of Botany	The Maharaja Sayajirao University of Baroda, Vadodara,
5.	Dr. S.C. Tiwari	Associate Professor	sct_in@yahoo.com	Soil Science & Ethno forestry	Department of Forestry, Wildlife & Environmental Sciences	Guru Ghasidas, Vishwavidyalaya Bilaspur, Chhattisgarh
6.	Dr. G.S. Singh	Professor	gopalsingh.bhu@gmail.com; gssingh@bhu.ac.in; gopalshs@yahoo.co.in;	Ecology, Environment and Sustainable Development	Institute of Environment & Sustainable Development,	BHU, Varanasi

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**Department of Geoinformatics
Proposed PhD Thesis Examiners**

Name of PhD Scholar : Tauseef Ahmad

Registration no : CUJ/P/2014/PHD/LRM/001

Topic of PhD : Geoinformatics based flood hazard and risk assessment in Kashmir valley (Jammu & Kashmir, India)

Supervisors : Prof. A.C. Pandey, Supervisor,
Dr. Amit Kumar, Co-Supervisor

Examiners' details

Sl. No	Name	Designation	Contact Details	Research Area	Department	Institute
1	Dr. Saumitra Mukherjee	Professor and Dean	saumitra@mail.jnu.ac.in	Remote sensing, Space Sciences, GIS applications in Environmental Geosciences, Climatology, Hydrogeology	School of Environmental Sciences	Jawaharlal Nehru University, New Delhi
2.	Dr. A.K. Nema	Professor	anupamnel.com; anupam_nema@rediffmail.com	Soil and Water Conservation Engineering; Rainfed Agriculture	Department of Farm Engineering	Institute of Agricultural Sciences, BHU
3.	Dr. Subashisa Dutta	Professor & Head	subashisa@iitg.ernet.in	Flood Inundation Modeling, Geo-spatial technology, bank erosion, 2D river flow and sediment transport modeling,	Department of Civil Engineering	Indian Institute of Technology, Guwahati
4.	Dr. Bakimchandra Oinam	Associate Professor	bakim@nitmanipur.ac.in	Geostatistical methods/spatial interpolation techniques, hydrological modeling, rainwater harvesting potential zone assessment	Department of Civil Engineering	NIT Manipur
5.	Dr. C.S. Dubey	Professor	csdubey@geology.du.ac.in; csdubey@gmail.com	Himalayan Geology, Environmental Geology (RS and GIS), Environment Impact assessment and management, River Valley	Department of Geology, UGC-Centre of Advanced Studies	North Campus, University of Delhi, Delhi
6.	Mr. C.M Bhatt	Scientist/Engineer - SF	cmbhatt@iirs.gov.in	Flood Hazard Studies	Disaster Management Studies	Indian Institute of Remote Sensing ISRO

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**Department of Geoinformatics
Central University of Jharkhand**

Proposed PhD Thesis Examiners / Evaluator

Name of PhD Scholar : Basheer Ahammed K.K.

Registration no : CUJ/P/2015/PHD/LRM/003

Topic of PhD : Analyzing Spatio-Temporal Dynamic of Coastlines and Socio-Physical Vulnerabilities under Climate Change and Extreme Events in Eastern Coast of India

Supervisor : Prof. A. C. Pandey

Examiners' details

Sl. No	Name	Designation	Contact Details	Research Area	Department	Institute
1	Prof. Vikrant Jain	Prof. & Head	vjain@iitgn.ac.in	Earth Surface Processes, River Science, External forcing and river's future	Earth Sciences	IIT-Gandhinagar
2.	Dr. A. K. Sahai	Scientist G	sahai@tropmet.res.in 91-(0)20-25904520	Climate Variability and Predictability Monsoon prediction and variability	Climate Research and Services	IITM Pune
3.	Prof. R.K. Mall	Professor & Coordinator	rkmall@bhu.ac.in; mall_raj@rediffmail.com	Climate Change, Disaster Management Simulation Modelling, Water and Agriculture Climate Risk Mangement	DST-Centre of Excellence in climate change research, Institute of Environment & Sustainable Development	BHU, Varanasi
4.	Dr. Varun Joshi	Associate Professor,	varunj63@gmail.com	Environmental Impact Assessment, Climate Change, Rivers, Natural Hazards	School of Environment Management	Guru Gobind Singh Indraprastha University,
5.	Dr. B.S. Chaudhary	Professor	bsgeokuk@yahoo.com	Remote Sensing & GIS, Hydrology, Electrical Prospecting	Department of Geophysics	Kurukshetra University
6.	Dr. D. Mitra	Scientist/Engineer- SG & Head	mitra@iirs.gov.in	Coastal Geology and Geomorphology	Marine and Atmospheric Sciences Department	Indian Institute of Remote Sensing ISRO, Govt. of India, Dehradun

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