

**Centre for Land Resource Management,  
School of Natural Resource Management  
Central University of Jharkhand**

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**Minutes of meeting of 2<sup>nd</sup> Board of Studies (31<sup>st</sup> March 2017)**

A meeting of the Board of Studies (BOS) of Centre for Land Resource Management (CLRM) was convened on 31 March 2017 at 10:00 am at Central University of Jharkhand (CUJ). The following BOS members were present in the meeting:

1. Prof. A.C. Pandey, Head, Centre for Land Resource Management, Dean, School for Natural Resource Management, CUJ & Convener & Chairperson Ex-Officio
  2. Dr. I.M. Bahuguna, Scientist 'G', Space Applications Centre, ISRO, Ahmedabad
  3. Dr. Parul Srivastava, Vice President, IORA Pvt. Ltd., New Delhi
  4. Dr. Prashant K Srivastava, IESD, BHU
  5. Prof. S. Medhekar, Head, Centre for Applied Physics, CUJ & CoE
  6. Dr. Ajai Singh, Head, Centre for Water Engineering & Management, CUJ & Dean, Student Welfare
  7. Dr. Purabi Saikia, Centre for Environmental Sciences, CUJ
  8. Dr. G.P. Singh, Centre for Nanotechnology, CUJ
  9. Dr. Kiran Jalem, Assistant Professor, CLRM, CUJ
  10. Dr. Amit Kumar, Assistant Professor, CLRM, CUJ
- ii. Dr. Kanhaiya Lal, Assistant Professor, CLRM, CUJ attended the meeting as invitee.

The BOS unanimously resolved the following points:

1. The BOS members reviewed and approved all the courses and programmes (currently running and offered so far) offered by CLRM, namely Ph.D. (Geoinformatics), M.Sc. (Geoinformatics), Integrated M.Tech. (Geoinformatics) programmes (Annexure I, II, & III).
2. The BOS members discussed the School's/ Centre's Vision/ Mission Statement, research thrust area and approved it.
3. **Ph.D. programme:** The BOS members discussed the course structure, syllabus, and eligibility criteria for admission in the Ph.D. programme offered by CLRM since 2013.
  - a. The BOS recommended that the Ph.D. degree under CLRM should be awarded in Geoinformatics. The advertisement of the PhD programme should be in line with the concerned discipline.
  - b. The BOS approved the inclusion of the papers "Urban Planning" and "Satellite Meteorology" as an elective paper.
  - c. The BOS discussed and finalised that there will be only two compulsory papers as "Research Methodology, Statistics & Computer programming" and "Fundamental of Geospatial Technology and its Applications". The rest paper will be elective papers. All the compulsory and elective papers will have 4 credits each. As per the recommendation of RAC of the concerned PhD Scholars, the Scholar will have to opt one to two electives encompassing their research area. The Course work should be completed within the period of one semester and maximum of two semesters.

- d. BOS also ratified the Centre Research Committee and Research Committees of all eight PhD Scholars. Also, the BOS ratified the changes in the CRC and RAC members due to leaving of Dr. LK Sharma and Dr. VK Tripathi.
  - e. The BOS ratified the recommendations of RAC of all PhD Scholars (2013, 2014, 2015, 2016 admissions) and CRC.
  - f. The BOS (CLRM) approved the name of Prof. A.C. Pandey and Dr. Amit Kumar as eligible PhD supervisor.
  - g. The BOS (CLRM) approved the change of supervisor from Dr. L.K. Sharma to Prof. A.C. Pandey, and for the students PhD Scholars Ms. Binita Kumari and Mr. Saurabh Kumar Gupta. After leaving the CUJ by Dr. L.K Sharma, his two PhD Scholars namely Ms. Binita Kumari and Mr. Saurabh Kumar Gupta were reallocated under the supervision of Prof. A.C. Pandey (Supervisor) & Dr. Amit Kumar (Co-Supervisor) for Ms. Binita Kumari and Prof. A.C. Pandey (Supervisor) for Mr. Saurabh Kumar Gupta.
  - h. The BOS (CLRM) reviewed the RAC and CRC recommendation for the PhD Scholars Ms. Binita Kumari and Mr. Saurabh Kumar Gupta and also recommended to remove the name the name of Dr. L.K. Sharma as the external supervisor.
  - i. The PhD should be awarded in the Geoinformatics as approved by School Board and BRS earlier and not in Land Resource Management.
4. **Int. M.Tech:** BOS members discussed the University notification to temporarily stop the admission in Int. M.Tech (Geoinformatics) and suggested to move in line with the same.
    - a. The BOS (CLRM) recommended to continue the MSc. (Geoinformatics) programme instead of Int. M.Tech (Geoinformatics) as per the recommendations of Academic Council, CUJ.
    - b. The BOS approved the UG project guidelines, M.Tech. Dissertation guidelines, and Internship guidelines as proposed by the Centre.
  5. **M.Sc.:** BOS members discussed the revised syllabus of M.Sc. and recommended to continue the MSc (Geoinformatics) as core academic programme of the Centre.
    - a. The BOS approved the changed proposed in the MSc. Programme, viz.,
      - i. Inclusion of "Geoinformatics applications in Coastal studies" and "Geoinformatics applications in cryospheric studies" as an elective papers.
      - ii. Incorporation of papers "Geoinformatics in Climatology & Satellite meteorology", "Geoinformatics in Regional & Urban Planning" and "Geoinformatics in Hydrology & Water Resources" as compulsory papers.
      - iii. merging of papers
        - "Geographic Information Systems: and "Spatial Database, Analysis and Modeling" as "**Geographic Information Systems & Spatial Modeling**"
        - "Geostatistics" and "Research Methodology and Project Management" as "**Research Methodology & Geostatistics**"
        - "Applications of Geoinformatics" and "Geoinformatics in Natural Resource Management" as "**Applications of Geoinformatics in Natural Resource Management**"
    - b. The BOS approved the M.Sc. Dissertation guidelines and Internship guidelines as proposed by the Centre.
  6. The change of syllabus in MSc. (Geoinformatics) will be applicable to the students of 2017 admission and onwards.

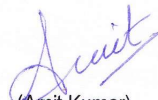


7. It is also recommended that the all batch of Int. M.Tech (2013-18, 2014-19, 2015-20, and 2016-21) will be awarded with the degree of Int. M.Tech in Geoinformatics.
8. The BOS approved the award of the degree of M.Sc. Geoinformatics to all the M.Sc. batches
9. The BOS members discussed, agreed, and recommended that "Academics Field Tour" will remain as an essential component of the MSc (Geoinformatics) and Int. M.Tech (Geoinformatics) programmes and all the students of MSc and Int. M.Tech. Programme must be given sufficient exposure of the field covering different applied aspects.
10. The BOS members recommended to improve the library with sufficient number of books as mentioned in the syllabus.
11. Centre proposed a new course of "Geoinformatics in Urban Planning", and BOS (CLRM) approved and recommended the same. Dr. Ajai Singh, proposed to open a new Centre with additional faculties for the same
12. The BOS members strongly recommended to strengthen the laboratory facility in the centre with adequate number of workstations, 3D workstations, various satellite images, aerial photographs, as well as various RS/GIS softwares with sufficient number of licences viz., ArcGIS, ENVI, MATLAB, SAR Scape etc.
13. 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 the vote of thanks.

  
(Kiran Jalem)

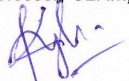
Asst. Professor, CLRM, CUJ

  
(Amit Kumar)

Asst. Professor, CLRM, CUJ

  
(Kanhaiya Lal)

Assistant Professor, CLRM, CUJ



(G.P. Singh)

Assistant Professor, CNT, CUJ



(P. Saikia)

Assistant Professor, CEVS CUJ



(Ajai Singh)

Head, CWEM & DSW, CUJ



(Parul Srivastava)

Vice President, IORA Pvt. Ltd.,  
New Delhi



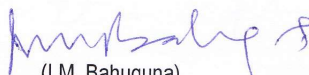
(Prashant K Srivastava)

IESD, BHU



(Prof. S. Medhekar)

Head, CAP & COE, CUJ



(I.M. Bahuguna)

Scientist 'G',  
Space Applications Centre, ISRO,  
Ahmedabad



(Prof. A.C. Pandey)

Head, Centre for Land Resource Mgmt.  
Dean, School for Natural Resource Mgmt.  
Convener & Chairperson Ex-Officio



31<sup>st</sup> March 2017

**Eligible supervisors in the Centre for Land Resource Management are**

- i. Prof. Arvind Chandra Pandey,  
Head, Centre for Land Resource Management (CLRM),  
Dean, School of Natural Resource Management (SNRM)
- ii. Dr. Amit Kumar,  
Assistant Professor,  
Centre for Land Resource Management

*Handwritten signatures in blue ink:*

- Arvind Chandra Pandey
- Amit Kumar
- Dr. Arvind Chandra Pandey
- Dr. Amit Kumar
- Dr. Arvind Chandra Pandey
- Dr. Amit Kumar
- Dr. Arvind Chandra Pandey
- Dr. Amit Kumar





31<sup>st</sup> March 2017

**Research areas of Centre for Land Resource Management**

- i. Water resources, groundwater assessment and contamination,
- ii. Natural hazards, land slide, flood, drought
- iii. Cryospheric studies
- iv. Forest Geoinformatics and Biomass modelling
- v. Land Degradation
- vi. Climate change and sustainable development.
- vii. Urban environmental changes
- viii. Ecological modelling
- ix. Extra-terrestrial mapping
- x. Sub surface coal fire prognosis
- xi. Hyperspectral remote sensing for mineral exploration
- xii. Microwave remote sensing for forest and Cryospheric studies

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*Divyanshu*

*Pratima*

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# Centre for Land Resource Management

Annexure II

## COURSE STRUCTURE FOR M.SC. GEOINFORMATICS

	CODE	PAPERS	L	T	P	CREDIT
<b>SEMESTER I (23)</b>						
THEORY	MGI 411011	Remote Sensing & Photogrammetry	2	1	0	3
	MGI 411021	Cartography & Global Positioning System	2	1	0	3
	MGI 411032	Geographic Information Systems & Spatial Modeling	2	1	0	3
	MGI 411041	Geosciences & Image Interpretation	2	1	0	3
	MGI 411052	Geostatistics & Research Methodology	2	1	0	3
LAB	MGI 412062	Remote Sensing & Photogrammetry Lab	0	0	2	2
	MGI 412071*	GPS & Cartography Lab	0	0	2	2
	MGI 412082*	Geographic Information Systems & Spatial Modeling Lab	0	0	2	2
	MGI 412090	Geosciences & Image Interpretation Lab	0	0	2	2
<b>SEMESTER II (23)</b>						
THEORY	MGI 421011	Digital Image Processing	2	1	0	3
	MGI 421022	Applications of Geoinformatics in Natural Resource Management	2	1	0	3
	MGI 421032	Geoinformatics in Regional & Urban Planning	2	1	0	3
	MGI 421042	Geoinformatics in Disaster Management	2	1	0	3
	MGI 421052	Computer Programming & WebGIS	2	1	0	3
LAB	MGI 422060	Digital Image Processing Lab	0	0	2	2
	MGI 422070	Applications of Geoinformatics in Natural Resource Management Lab	0	0	2	2
	MGI 422081	Geoinformatics in Regional & Urban Planning Lab	0	0	2	2
	MGI 422090	Geoinformatics in Disaster Management Lab	0	0	2	2
<b>SEMESTER III (22)</b>						
THEORY	MGI 511010	Geoinformatics in Climatology & Satellite meteorology	2	1	0	3
	MGI 511021	Geoinformatics in Hydrology & Water Resources	2	1	0	3
	MGI ***	ELECTIVE -I	2	1	0	3
	MGI ***	ELECTIVE -II	2	1	0	3
	MGI 514031	Field Tour				2
LAB	MGI 512040	Geoinformatics in Climatology & Satellite meteorology Lab	0	0	2	2
	MGI 512051	Geoinformatics in Hydrology & Water Resources Lab	0	0	2	2
	MGI ***	ELECTIVE -I Lab	0	0	2	2
	MGI ***	ELECTIVE -II Lab	0	0	2	2
<b>SEMESTER IV (21)</b>						
	MGI 524010	DISSERTATION				21

**LIST OF ELECTIVES (for Semester III)**

MGI 516061	Land Information System	MGI 512021	Land Information Systems Lab
MGI 516071	Geoinformatics applications in Coastal studies	MGI 512031	Geoinformatics applications in Coastal studies Lab
MGI 516081	Mobile Mapping	MGI 512141	Mobile Mapping Lab
MGI 516091	Geoinformatics in Ecology & Forestry	MGI 512151	Geoinformatics in Ecology & Forestry Lab
MGI 516101	Geoinformatics in Agriculture, Soil & Land Evaluation	MGI 512161	Geoinformatics in Agriculture, Soil & Land Evaluation Lab
MGI 516111	Geoinformatics applications in cryospheric studies	MGI 512171	Geoinformatics applications in cryospheric studies Lab

Students may opt any two elective papers from the given list.

*Dr. Anant Kumar*  
*Dr. Anant Kumar*

*Dr. Anant Kumar*

*Dr. Anant Kumar*

*Dr. Anant Kumar*

*Dr. Anant Kumar*

*Dr. Anant Kumar*

*Dr. Anant Kumar*



**CENTRE FOR LAND RESOURCE MANAGEMENT**  
**Course Structure for Five Year Integrated M.TECH Degree in Geoinformatics**

Annexure III

	Code	PAPERS	Classes Per Week			Credit
			L	T	P	
<b>SEMESTER I (23 Credits)</b>						
THEORY	ENG 120040	Communicative English	2	0	1	3
	EVS 120050	Environmental Studies	2	1	0	3
	PHY 110021	Engineering Physics I	2	1	0	3
	CHM 110030	Engineering Chemistry I	2	1	0	3
	MAT 110010	Engineering Mathematics I	2	1	0	3
		Engineering Mechanics	3	0	0	3
LAB	PHY 112080	Engineering Physics I LAB	0	0	1	1
	CHM 112090	Engineering Chemistry I LAB	0	0	1	1
		Engineering Mechanics LAB	0	0	1	1
	EEN 112120	Engineering Drawing & Graphics	1	0	1	2
<b>SEMESTER II (24 Credits)</b>						
THEORY	PHY 121020	Engineering Physics II	2	1	0	3
	CHM 121031	Engineering Chemistry II	2	1	0	3
	MAT 121010	Engineering Mathematics II	2	1	0	3
	COM 120040	Fundamental of Computing	2	1	0	3
		Engineering Thermodynamics	2	1	0	3
		Basics of Electrical Engineering	1	1	0	3
LABS	PHY 122110	Engineering Physics II LAB	0	0	1	1
	CHM 122120	Engineering Chemistry II LAB	0	0	1	1
		Basics of Electrical Engineering LAB	0	0	1	1
		Workshop Practice	0	1	2	3
<b>SEMESTER III (24 Credits)</b>						
THEORY	GEO 211011	Fundamentals of Remote Sensing	2	1	0	3
	GEO 211020	Geodesy and Digital Cartography	2	1	0	3
	GEO 211031	Geosciences & Image Interpretation	2	1	0	3
	GEO 211041	JAVA Programming	2	1	0	3
	LRM 210100	Disaster Management	2	1	0	3
	GEO 211050	Numerical Methods & Computation Techniques	2	1	0	3
	LABS	GEO 212080	Geodesy and Digital Cartography Lab	0	0	2
GEO 212061		Geosciences & Image Interpretation Lab	0	0	2	2
GEO 212071		JAVA Lab	0	0	2	2
<b>SEMESTER IV (23 credits)</b>						
THEORY	GEO 221010	Geographic Information System	2	1	0	3
	GEO 221020	Global Positioning System	2	1	0	3
	GEO 221030	Digital Image Processing	2	1	0	3
	GEO 221040	Surveying	2	1	0	3
	GEO 221050	Geostatistics	2	1	0	3
	LABS	GEO 222060	Digital Image Processing Lab	0	0	2
GEO 222070		GIS Lab	0	0	2	2
GEO 222080		GPS Lab	0	0	2	2
GEO 222090		Surveying Lab	0	0	2	2
<b>SEMESTER V (25 credits)</b>						
THEORY	GEO 311010	Aerial Photography & Digital Photogrammetry	2	1	0	3
	GEO 311020	Spatial Database, Analysis and Modelling	2	1	0	3
	GEO 311030	Advanced Remote Sensing Techniques	2	1	0	3
	GEO 311040	Geoinformatics in Natural Resource Management	2	1	0	3

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LAB		Elective- I (Any one elective offered by CUJ including CLRM)	2	1	0		3
	GEO 312090	Photogrammetry Lab	0	0	2		2
	GEO 312100	Spatial Database, Analysis and Modeling Lab	0	0	2		2
	GEO 312110	Geoinformatics in Natural Resource Management Lab	0	0	2		2
	GEO 312120	Advanced Remote Sensing Techniques Lab	0	0	2		2
LIST OF ELECTIVES		Elective- I Lab	0	0	2		2
	GEO 311050	Mobile Mapping	2	1	0		3
	GEO 311060	Geoinformatics in Environmental Monitoring	2	1	0		3
	GEO 311070	Climatology & Satellite Meteorology	2	1	0		3
	GEO 311080	Fundamental of Geospatial Technology & Application <small>(only for other Centers)</small>	3	1	0		4
	GEO 312130	Mobile Mapping Lab	0	0	2		2
	GEO 312140	Geoinformatics in Environmental Monitoring Lab	0	0	2		2
GEO 312150	Climatology & Satellite Meteorology Lab	0	0	2		2	
<b>SEMESTER VI ( 22 credits)</b>							
THEORY	GEO 321010	Data Mining & Neural Networks	2	1	0		3
	GEO 321020	Hydrology and water resources	2	1	0		3
	GEO 321030	Geoinformatics in Regional and Urban planning	2	1	0		3
	GEO 321040	Ecology & Forestry	2	1	0		3
	GEO 321050	Field Visit & Report Writing	0	0	2		2
LABS	GEO 325060	Data Mining & Neural Networks Lab	0	0	2		2
	GEO 325070	Hydrology and water resources Lab	0	0	2		2
	GEO 325080	Regional and Urban Planning Lab	0	0	2		2
	GEO 325090	Ecology & Forestry Lab	0	0	2		2
<b>SEMESTER VII ( 25 credits)</b>							
THEORY	GEO 414010	Research Methodology & Project Formulation	2	1	0		3
	GEO 411020	Agriculture, Soil & Land Evaluation	2	1	0		3
	GEO 411030	Geoinformatics in Disaster Risk Assessment	2	1	0		3
	GEO 411040	Geoinformatics for Coastal Zone Management	2	1	0		3
	GEO 411050	Geoinformatics for Environmental Monitoring	2	1	0		3
LABS	GEO 411060	Field Tour	0	0	2		2
	GEO 412070	Agriculture, Soil & Land Evaluation Lab	0	0	2		2
	GEO 412080	Geoinformatics in Disaster Risk Assessment Lab	0	0	2		2
	GEO 412090	Geoinformatics for Coastal Zone Management Lab	0	0	2		2
	GEO 412100	Environmental Monitoring Lab	0	0	2		2
<b>SEMESTER VIII ( 23 credits)</b>							
THEORY	GEO 421010	Web Applications in Geoinformatics	2	1	0		3
	GEO 421020	Geoinformatics in Business, Health and Energy	2	1	0		3
LABS		Elective-II	2	1	0		3
	GEO 422070	Web applications Lab	0	0	2		2
		Elective-II LAB	0	0	2		2
LIST OF ELECTIVES II	GEO 421030	UG Project					10
	GEO 421040	Geoinformatics in Cryospheric Studies	2	1	0		3
	GEO 421050	Geoinformatics in Transportation Planning	2	1	0		3
	GEO 421060	Land Information System	2	1	0		3
	GEO 422080	Geoinformatics in Cryospheric Studies Lab	0	0	2		2
	GEO 422090	Transportation Lab	0	0	2		2
	GEO 422100	Land Information System Lab	0	0	2		2
<b>SEMESTER IX (21 Credits):</b> GEO 520010 - Thesis (to be contd. in Semester X)							21
<b>SEMESTER X (24 Credits):</b> GEO 520010 – Thesis							24



## CENTRE FOR LAND RESOURCE MANAGEMENT

### Proposed Course Structure for Two Years M.Tech in Geoinformatics

#### In place of existing 5 years integrated M.Tech in Geoinformatics

The **minimum eligibility criteria** for admission to 2 YEARS M.Tech in Geoinformatics is **60%** marks in aggregate in B.Tech in Civil/ Electronic/ Electronics & Communication/ IT/ Computer Science/ B.Arch. / OR MSc. degree in Geoinformatics/ Remote Sensing/ GIS/ Geomatics/ Geography/ Environmental Sciences/ Forestry/ Botany/ Geology/ Geophysics/ Mathematics/ Oceanography/ Agriculture/ Atmospheric Sciences/ Climatology/ Information Science/ Computer Science/ Disaster Management/ Electronics/ Town Planning

**Maximum number of seats** for admission in 2 years M.Tech in Geoinformatics: **10 seats**

	Code	PAPERS	Classes Per Week			Credit	
			L	T	P		
<b>SEMESTER I (25 Credits)</b>							
THEORY	LRM 411010	Fundamentals of Remote Sensing	2	1	0	3	
	LRM 411020	Geographic Information System & Spatial Database Analysis	2	1	0	3	
	LRM 411030	Digital Image Processing	2	1	0	3	
	LRM 411040	Global Positioning System	2	1	0	3	
	LRM 411050	Geosciences & Image Interpretation	2	1	0	3	
LABS	LRM 412060	Remote Sensing Lab	0	0	2	2	
	LRM 412070	Geographic Information System & Spatial Database Analysis Lab	0	0	2	2	
	LRM 412080	Digital Image Processing Lab	0	0	2	2	
	LRM 412090	Global Positioning System Lab	0	0	2	2	
	LRM 412100	Geosciences & Image Interpretation Lab	0	0	2	2	
<b>SEMESTER II (26 credits)</b>							
THEORY	LRM 421010	Aerial Photography & Digital Photogrammetry	2	1	0	3	
	LRM 421020	Research Methodology & Geostatistics	2	2	0	4	
	LRM 421030	Geoinformatics in Disaster Risk Assessment	2	1	0	3	
	LRM *****	Elective- I	2	1	0	3	
	LRM *****	Elective-II	2	1	0	3	
	LRM 421040	Field Visit & Report Writing	0	0	2	2	
LABS	LRM 422050	Photogrammetry Lab	0	0	2	2	
	LRM 422060	Geoinformatics in Disaster Risk Assessment Lab	0	0	2	2	
	LRM *****	Elective- I Lab	0	0	2	2	
	LRM *****	Elective- II Lab	0	0	2	2	
LIST OF ELECTIVES I	THEORY	LRM 421070	Geoinformatics in Hydrology and Water Resources	2	1	0	3
		LRM 421080	Climatology & Satellite Meteorology	2	1	0	3
	LABS	LRM 421090	Geoinformatics for Coastal Zone Management	2	1	0	3
		LRM 422100	Geoinformatics in Hydrology and Water Resources Lab	3	1	0	4
		LRM 422110	Climatology & Satellite Meteorology Lab	0	0	2	2
		LRM 422120	Geoinformatics for Coastal Zone Management Lab	0	0	2	2
LIST OF ELECTIVES II	THEORY	LRM 421130	Geoinformatics in Natural Resource Management	2	1	0	3
		LRM 421140	Geoinformatics in Regional and Urban planning	2	1	0	3
		LRM 421150	Geoinformatics in Soil, Agriculture & Forestry	2	1	0	3
	LABS	LRM 421160	Geoinformatics in Natural Resource Management Lab	2	1	0	3
		LRM 422170	Regional and Urban Planning Lab	0	0	2	2
		LRM 422180	Geoinformatics in Soil, Agriculture & Forestry Lab	0	0	2	2
<b>SEMESTER III (21 Credits)</b>							
	LRM 411010	M.Tech Dissertation (to be contd. in Semester IV)				21	
<b>SEMESTER IV (21 Credits)</b>							
	LRM 411010	M.Tech Dissertation				21	



**COURSE STRUCTURE**

**CENTRE FOR LAND RESOURCE MANAGEMENT**  
**SCHOOL OF NATURAL RESOURCE MANAGEMENT**  
**CENTRAL UNIVERSITY OF JHARKHAND**

**COURSE WORK FOR**  
**Ph.D. in Geoinformatics offered by Centre for Land Resource Management**  
**Total Credit: 16**

CODE	PAPERS	CREDIT
PGI 911010	Fundamentals of Geospatial Technology and its Applications	3+1= 4
PGI 911020	Research Methodology & Project Formulation	3+1= 4 ✓
PGI 911030	Computer Programming & Statistics	3+1= 4
PGI ***	Elective paper	3+1= 4

**ELECTIVE PAPERS**

PGI 911040	Geoinformatics in Ecology & Forestry
PGI 911050	Forest biomass & Ecological Modelling
PGI 911060	Water resources, Groundwater Assessment and Contamination
PGI 911070	Cryospheric Studies
PGI 911080	Natural Hazard Assessment
PGI 911090	Advances in Geoinformatics
PGI 911100	Geoenvironmental Modelling
PGI 911110	Land Degradation and Sustainable Development
PGI 911120	Urban Planning
PGI 911130	Satellite Meteorology

The course work will comprised of total 16 credits with 04 papers. The 03 credits for each paper covers the theory and 01 credit will be earned by the student through submitting assignment and presentation before end of the semester.

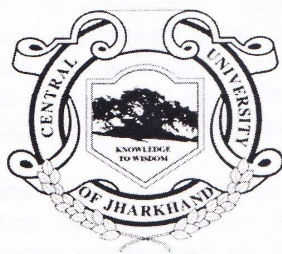


# COURSE STRUCTURE

*for*

**M.Sc.**

## **GEOINFORMATICS IN URBAN PLANNING**



**Centre for Land Resource Management  
School of Natural Resource Management  
Central University of Jharkhand  
Brambe, Ranchi**

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**Mission Statement:**

Globalisation, Urbanization and inter-connectivity of economies have brought in a new paradigm shift in defining 'the region'. Accepting the regional variations in the development process as inevitable and a necessity for over all development of the country, the role of a urban planner – the end product of our department of urban and regional planning, has forced us to adapt to the changing knowledge environment. At the same time, we look upon this as a challenge and an opportunity.

The 73rd and 74th Constitutional Amendment Act (CAA) in India has given a new impetus to the development planning with inputs from city, village, block/taluka and district that requires a set of new tools for understanding the issues, new tools for analysis and decision making process. Being in the business of skill development and knowledge transfer, The Centre for Land Resource Management, Central University of Jharkhand is trying to equip and transfer the kind of skills and knowledge that the market and society demands through its students.

The Post-Graduate Degree Program for Geoinformatics in Urban Planning prepares young professionals for a career in one or many of these:

- 1) Developing a critical understanding towards the processes that are shaping various spatial forms, their planning and development
- 2) Identifying planning problems and questions in Indian context and suggesting alternative models of urban, rural, regional and community and area planning
- 3) Developing a critical understanding towards the contradictions in urban, rural and regional spaces and its implications in planning
- 4) Using primary and secondary data to address contemporary issues, planning problems and questions
- 5) Application of latest technology (GIS, GPS, etc.) in urban and Sub-Urban planning and management
- 6) Critical perceptions about research problems and research design, learn what kinds of problems planners address in day-to-day life, and recognize the role of theory in shaping both questions and research design.
- 7) Exploring on the issues related to governance and urban legislation, land management, dignified and sustainable housing, urban image, urban poverty reduction, social risk prevention, adaptation and climate change mitigation, risk management for human settlements etc.
- 8) Designing and implementing a research project in response to a planning problem or Questions.

This course intends to give students a real world experience with urban and regional planning. By focusing on (a) selected area(s) the students will learn about the various aspects and scopes of planning as well as various socio-economic and politico-cultural aspects of urban and sub-urban living. Issues ranging from physical building and street design issues, environmental impacts, analysis methods, legal framework, city government, policies, and community dynamics to psychological dimensions and physical dimensions to the limit of the city and urban living. The course offers insights into regional development, rural planning, and integrated regional development. During the course the students will go for field work along with activities in the laboratory/studio as part of their assignments and all that finally culminate in the preparation of a plan for the study area.

To impart this high quality knowledge to our students, we use new approaches, techniques and subjects in our pedagogy such as Spatial Data Infrastructure, Remote Sensing and Geoinformatics, Climate change, Disaster management etc. Various research projects are carrying out by our faculty members and scholars around these subjects as well as intense interaction with the national and international bodies and active participation of staff members of the department in seminars/conferences helps our department to impart the specialized knowledge that is emerging in this field.

Through the programme offered by the Department in the field of Urban and Regional Planning, we equip the students in the skills of urban studies at various levels, Geospatial and statistical analyses on urban and regional planning, thorough understanding of urban land use, transportation planning, integrated city planning, preparation of master plan, strategies and management for human settlements, urban ecological and environmental sustainability. To expose our students with latest skill sets in this field, the department is trying to develop networking with various organizations and stakeholders.

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## Course Structure for Geoinformatics in Urban Planning

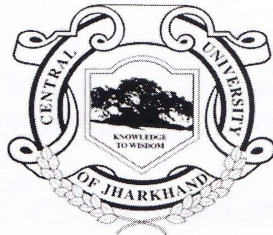
Code	PAPERS		Classes per week			Credits
			L	T	P	
<b>SEMESTER I (23 Credits)</b>						
THEORY	GUP411010	Fundamentals of Urban Planning	2	1	0	3
	GUP411020	Urban Demography and Socio-Economic Planning	2	1	0	3
	GUP411030	Surveying and Planning Techniques	2	1	0	3
	GUP411040	Urban Ecology and sustainable Environment	2	1	0	3
	GUP411050	Geoinformatics for Planning	2	1	0	3
LAB	GUP412060	Demography and Socio-economic Lab	0	0	2	2
	GUP412070	Surveying Lab	0	0	2	2
	GUP412080	Urban Ecology and sustainable Environment Lab	0	0	2	2
	GUP412090	Geoinformatics for Planning Lab	0	0	2	2
<b>SEMESTER II (25 Credits)</b>						
THEORY	GUP421010	Integrated Town and Regional Planning	2	1	0	3
	GUP421020	Urban Hydrology and Water Resources	2	1	0	3
	GUP421030	Urban Spatial Decision Support system	2	1	0	3
	GUP421040	Urban Informatics & Modeling	2	1	0	3
		Elective Paper	2	1	0	3
LAB	GUP422070	Integrated Town and Regional Planning Lab	0	0	2	2
	GUP422080	Urban Hydrology and Water Resources Lab	0	0	2	2
	GUP422090	Urban Spatial Decision Support system Lab	0	0	2	2
	GUP422110	Urban Informatics & Modelling Lab	0	0	2	2
		Elective Lab	0	0	2	2
THEORY	GUP421050	Urban Disasters	2	1	0	3
	GUP421060	Urban Utility Planning and Facility Management	2	1	0	3
LAB	GUP422120	Urban Disasters Lab	0	0	2	2
	GUP422130	Urban Utility Planning and Facility Management Lab	0	0	2	2
<b>Internship (On choice) during Summer Vacation</b>						
<b>SEMESTER III (23 Credits)</b>						
THEORY	GUP511010	Spatial Data Infrastructure	2	1	0	3
	GUP511020	Urban Environment and Climate	2	1	0	3
	GUP511030	Urban Housing and Real Estate Planning	2	1	0	3
	GUP511040	Research Methodology and Quantitative Methods	2	1	0	3
		Elective Paper	2	1	0	3
LAB	GUP412070	Spatial Data Infrastructure Lab	0	0	2	2
	GUP412080	Urban Environment and Climate Lab	0	0	2	2
	GUP412090	Urban Housing and Real Estate Planning Lab	0	0	2	2
	GUP412110	Elective Lab	0	0	2	2
<b>Elective papers</b>						
THEORY	GUP511050	Participatory and Community Planning	2	1	0	3
	GUP511060	Urban Traffic and Transportation Planning	2	1	0	3
LAB	GUP412120	Participatory and Community Planning Lab	0	0	2	2
	GUP412130	Urban Traffic and Transportation Planning Lab	0	0	2	2
<b>SEMESTER IV (21 Credits)</b>						
	GUP521010	<b>PROJECT</b>	0	0	0	21
<b>Total</b>						<b>92</b>



# COURSE STRUCTURE & SYLLABI

*for*

## M.Sc. GEOINFORMATICS



**Centre for Land Resource Management  
School of Natural Resource Management  
Central University of Jharkhand  
Brambe, Ranchi**

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# Centre for Land Resource Management

Annexure II

## COURSE STRUCTURE FOR M.SC. GEOINFORMATICS

	CODE	PAPERS	L	T	P	CREDIT
<b>SEMESTER I (23)</b>						
THEORY	MGI 411011	Remote Sensing & Photogrammetry	2	1	0	3
	MGI 411021	Cartography & Global Positioning System	2	1	0	3
	MGI 411032	Geographic Information Systems & Spatial Modeling	2	1	0	3
	MGI 411041	Geosciences & Image Interpretation	2	1	0	3
	MGI 411052	Research Methodology & Geostatistics	2	1	0	3
LAB	MGI 412062	Remote Sensing & Photogrammetry Lab	0	0	2	2
	MGI 412071*	GPS & Cartography Lab	0	0	2	2
	MGI 412082*	Geographic Information Systems & Spatial Modeling Lab	0	0	2	2
	MGI 412090	Geosciences & Image Interpretation Lab	0	0	2	2
<b>SEMESTER II (23)</b>						
THEORY	MGI 421011	Digital Image Processing	2	1	0	3
	MGI 421022	Applications of Geoinformatics in Natural Resource Management	2	1	0	3
	MGI 421032	Geoinformatics in Regional & Urban Planning	2	1	0	3
	MGI 421042	Geoinformatics in Disaster Management	2	1	0	3
	MGI 421052	Computer Programming & WebGIS	2	1	0	3
LAB	MGI 422060	Digital Image Processing Lab	0	0	2	2
	MGI 422070	Applications of Geoinformatics in Natural Resource Management Lab	0	0	2	2
	MGI 422081	Geoinformatics in Regional & Urban Planning Lab	0	0	2	2
	MGI 422090	Geoinformatics in Disaster Management Lab	0	0	2	2
<b>SEMESTER III (22)</b>						
THEORY	MGI 511010	Geoinformatics in Climatology & Satellite meteorology	2	1	0	3
	MGI 511021	Geoinformatics in Hydrology & Water Resources	2	1	0	3
	MGI ***	ELECTIVE -I	2	1	0	3
	MGI ***	ELECTIVE -II	2	1	0	3
	MGI 514031	Field Tour				2
LAB	MGI 512040	Geoinformatics in Climatology & Satellite meteorology Lab	0	0	2	2
	MGI 512051	Geoinformatics in Hydrology & Water Resources Lab	0	0	2	2
	MGI ***	ELECTIVE -I Lab	0	0	2	2
	MGI ***	ELECTIVE -II Lab	0	0	2	2
<b>SEMESTER IV (21)</b>						
	MGI 524010	DISSERTATION				21

**LIST OF ELECTIVES (for Semester III)**

MGI 516061	Land Information System	MGI 512021	Land Information Systems Lab
MGI 516071	Geoinformatics applications in Coastal studies	MGI 512031	Geoinformatics applications in Coastal studies Lab
MGI 516081	Mobile Mapping	MGI 512141	Mobile Mapping Lab
MGI 516091	Geoinformatics in Ecology & Forestry	MGI 512151	Geoinformatics in Ecology & Forestry Lab
MGI 516101	Geoinformatics in Agriculture, Soil & Land Evaluation	MGI 512161	Geoinformatics in Agriculture, Soil & Land Evaluation Lab
MGI 516111	Geoinformatics applications in cryospheric studies	MGI 512171	Geoinformatics applications in cryospheric studies Lab

Students may opt any two elective papers from the given list.

