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

Minutes of meeting of Board of Studies (17.11.2014)

A meeting of the Board Of Studies (BOS) of Centre for Land Resource Management (CLRM) was convened on 17 November 2014 at 1000 hrs at Central University of Jharkhand (CUJ). The following 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. Mr. Ashoka Taomar, Head, GIS Division, RAMTECH, Noida
4. Prof. A. Datta, Professor, Centre for Applied Chemistry, CUJ
5. Dr. Manoj Kumar, Head, Centre for Environmental Sciences, CUJ
6. Dr. Ajai Singh, Head, Centre for Water Engineering & Management, CUJ
7. Dr. P.K. Parida, Coordinator & Assistant Professor, Centre for Applied Mathematics, CUJ
8. Dr. L.K. Sharma, Assistant Professor, CLRM, CUJ
9. Dr. Kanhaiya Lal, Assistant Professor, CLRM, CUJ

One of the external board member, Dr. H. Kharkwal, Deputy Director, MoEF, New Delhi could not attend the meeting.

Also, following faculty of CLRM were present in the meeting:

1. Dr. Amit Kumar, Assistant Professor, CLRM, CUJ
2. Dr. Suraj K. Sighn, Assistant Professor, CLRM, CUJ
3. Dr. Shruti Kanga, Assistant Professor, CLRM, CUJ

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 (since 2013), M.Sc. (since 2012), Integrated M.Tech. (Since 2013). Diploma (since 2012) & Certificate (since 2012) programmes (Annexure I, II, III, IV & V).
2. The BOS members also approved the papers offered by the CLRM namely Elective Paper of Fundamental of Geospatial Technology and Application and Disaster Management (Common Paper as per UGC) (Annexure VI & VII).
3. The BOS members discussed the School's/ Centre's Vision/ Mission Statement and suggested to open other courses in the Centre other than Geoinformatics/ Applied Geoinformatics.
4. **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 Applied Geoinformatics.
 - b. The minimum eligibility criteria for admission to Ph.D degree should be the following courses with 55% marks in aggregate:

M.Tech/ MSc. degree in Geoinformatics/ Remote Sensing/ GIS/ Geomatics
OR
Master or equivalent degree in Geography, Environmental Sciences/ Forestry/ Chemistry/ Physics/
Geology/ Geophysics/ Mathematics/ Oceanography/ Agriculture/ Atmospheric Sciences/

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Climatology/ Information Science/ Computer Science/ Disaster Management/ Electronics/ Town Planning/ Botany/ Zoology/ Allied disciplines with PG Diploma in RS & GIS.

5. **Int. M.Tech:** BOS members discussed the revised syllabus of Int. M.Tech and remarked the course structure as complete, which covers all studies related to Geoinformatics including remote sensing and its applications. As fifth semester onwards, the course content is more of applied aspect of Geoinformatics, hence BOS recommended the change in name of the course as Int. M.Tech in Applied Geoinformatics in place of Int. M.Tech in Geoinformatics.
 - a. The BOS members suggested to include the content of popular programming languages viz., JAVA, .net and C# instead of C++. Therefore, the BOS finally recommended to insert a paper of .net along with web programming in place of C/ C++ as well as a separate paper of java programming in place of C++.
 - b. The credit for the B.Tech project (Semester VIII) will be of 10 instead of 09.
 - c. Minimum eligibility criteria for admission in M.Tech. programme is approved as per the existing norms, which are as follows:

55% marks in aggregate with physics, chemistry, mathematics or physics, chemistry, biology as a subject in 10+2 or equivalent examination.
6. **M.Sc.:** BOS members discussed the revised syllabus of M.Sc. and recommended to change the name of the course from MSc. Geoinformatics to MSc. Applied Geoinformatics.

Minimum eligibility criteria for admission in M.Sc. programme is approved as per the existing norms which are as follows:

55% marks in aggregate with Bachelor degree in Environmental Sciences/ Forestry/ Geography/ Chemistry/ Physics/ Geology/ Geophysics/ Mathematics/ Oceanography/ Agriculture/ Atmospheric Sciences/ Climatology/ Information Science/ Computer Science/ Disaster Management/ Electronics/ Town Planning/ Botany/ Zoology/ Allied disciplines, or B. Arch., or B.E./ B.Tech in any branch of engineering.
7. Looking into the existing academic courses by CLRM, the award of degree for the various programmes will be made effective after the approval of Academic Council. The change in the name of degree will be implemented for existing academic batches as per the following conditions:
 - a. It is also recommended that the existing batch of Int. M.Tech (2013-18 and 2014-19) will also be awarded with the degree of Int. M.Tech in Applied Geoinformatics. The students of these two existing batches will have to cover/ complete left over papers (as per the new syllabus) during their academic semesters as per the recommendation of the Centre.
 - b. The BOS approved the award of the degree of M.Sc. Geoinformatics to the M.Sc. batch 2012-14. Also they recommended the same degree to be awarded to the M.Sc. batch 2013-15, which will be scheduled to complete by June 2015.
 - c. It is also recommended that Ph.D award will be in Applied Geoinformatics and applicable for all the batches (2013 onwards).
 - d. It is also recommended that the degree for new batches will be advertised and awarded as per the new nomenclature namely M.Sc. in Applied Geoinformatics, Int. M.Tech in Applied Geoinformatics, Ph.D in Applied Geoinformatics.
 - e. As per recommendations of the BOS, minor inclusion viz., 3D feature, route feature, Building information Management, SCADA, etc., will be included in the syllabus of Int. M.Tech and M.Sc.
8. The BOS approved syllabus and course structure of Diploma in Geoinformatics and also the award of Diploma in Geoinformatics (Batch 2012-13). They also approved the inclusion of paper 'Geostatistics' in place of the paper 'Fundamentals of Calculus, Vectors, Matrices & Statistics' in the first semester.

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- 9. The BOS members also approved the inclusion of two students in M.Sc. III Semester (batch 2012-14) after completion of their Diploma course of two semesters (2012-13). The BOS approved the bridge course (Annexure VIII) prepared and imparted for the transfer from Diploma to M.Sc programme.
- 10. The BOS members approved syllabus and course structure of Certificate course in Geoinformatics.
- 11. The BOS members approved the changes in the credits of the following academics programmes:

Courses	Credit in Old syllabus	Credit in new syllabus
M.Sc. Applied Geoinformatics	Total: 86	Total: 89
Int. M.Tech in Applied Geoinformatics	Total: 229	Total: 234

- 12. The BOS members discussed and agreed that Field Tour will remain as an essential component of the MSc and Int. M.Tech programmes and all the students of MSc and Int. M.Tech. programme must be given sufficient exposure of the field covering different applied aspects.
- 13. The BOS members approved the name of the eligible supervisors namely, Prof. A.C. Pandey and Dr. LK Sharma for the Ph.D supervision in the Centre.
- 14. The BOS members approved the admission of the students in Ph.D programme during the academic year 2013-14 & 2014-15. The course work will continue as per the recommendations of the Centre Research Committee (CRC) of the concerned student.
- 15. The BOS members recommended to improve the library with sufficient number of books as mentioned in the syllables.
- 16. 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.
- 17. The relevant recommendations may be submitted before the Board of Research Studies (BRS), Board of School Studies and Academic Council (AC).

The meeting concluded with the vote of thanks by the Convener.

Shruti Kanga
(Shruti Kanga)

Asst. Professor, CLRM, CUJ

Suraj K. Singh
(Suraj K. Singh)

Asst. Professor, CLRM, CUJ

Amit Kumar
(Amit Kumar)

Asst. Professor, CLRM, CUJ

L.K. Sharma
(L.K. Sharma)

Assistant Professor, CLRM, CUJ

P.K. Parida
(P.K. Parida)

Assistant Professor, CLRM, CUJ

(P.K. Parida)
Coordinator & Assistant Professor,
Centre for Applied Mathematics, CUJ

Manoj Kumar
(Manoj Kumar)

Head, Centre for Environmental
Sciences, CUJ

Ajai Singh
(Ajai Singh)

Head, Centre for Water
Engineering & Management, CUJ

Ashoka Taomar
(Ashoka Taomar)

Head, GIS Division, RAMTECH,
Noida

I.M. Bahuguna
(I.M. Bahuguna)
17/11/14

Space Applications Centre, ISRO,
Ahmedabad

A. Datta
(A. Datta)

Professor,
Centre for Applied Chemistry, CUJ

Prof. A.C. Pandey
(Prof. A.C. Pandey)
17/11/14

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

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Annexure I

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

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

CODE	PAPERS	CREDIT
PGI 111010	Fundamentals of Geospatial Technology and its Applications	3+1= 4
PGI 111020	Research Methodology & Project Formulation	3+1= 4
PGI 111010	Computer Programming & Statistics	3+1= 4
PGI ***	Elective paper	3+1= 4
ELECTIVE PAPERS		
XXX	Geoinformatics in Ecology & Forestry	
XXX	Forest biomass & Ecological Modelling	
XXX	Water resources, Groundwater Assessment and Contamination	
XXX	Cryospheric Studies	
XXX	Natural Hazard Assessment	
XXX	Advances in Geoinformatics	
XXX	Geoenvironmental Modelling	
XXX	Land Degradation and sustainable development	

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.

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Centre for Land Resource Management

Annexure II

COURSE STRUCTURE FOR M.SC. APPLIED GEOINFORMATICS

	CODE	PAPERS	CREDIT
SEMESTER I			
THEORY	MGI 411011	Remote Sensing & Photogrammetry	3
	MGI 411021	Cartography & Global Positioning System	3
	MGI 411031	Geographic Information Systems	3
	MGI 411041	Geosciences & Image Interpretation	3
	MGI 411051	Geostatistics	3
LAB	MGI 412061	Geographic Information Systems Lab	2
	MGI 412071*	Remote Sensing & Photogrammetry Lab	2
	MGI 412081*	GPS & Cartography Lab	2
	MGI 412090	Geosciences & Image Interpretation Lab	2
SEMESTER II			
THEORY	MGI 421011	Digital Image Processing	3
	MGI 421021	Computer Programming & WebGIS	3
	MGI 421031	Research Methodology & Project Management	3
	MGI 421040	Applications of Geoinformatics	3
	MGI 421050	Geoinformatics in Natural Resource Management	3
LAB	MGI 422060	Digital Image Processing Lab	2
	MGI 422070	Computer Programming & WebGIS Lab	2
	MGI 422080	Applications of Geoinformatics Lab	2
	MGI 422090	Geoinformatics in Natural Resource Management Lab	2
SEMESTER III			
THEORY	MGI 511011	Spatial Database, Analysis and Modeling	3
	MGI 511021	Geoinformatics in Disaster Management	3
	MGI ***	ELECTIVE -I	3
	MGI ***	ELECTIVE -II	3
	MGI 514031	Field Tour	2
LAB	MGI 512041	Spatial Database, Analysis And Modeling Lab	2
	MGI 512051	Geoinformatics in Disaster Management Lab	2
	MGI ***	ELECTIVE -I Lab	2
	MGI ***	ELECTIVE -II Lab	2
SEMESTER IV			
	MGI 524010	PROJECT	21

LIST OF ELECTIVES (for Semester III)

MGI 516061	Land Information System	MGI 512091	Land Information Systems Lab
MGI 516071	Geoinformatics in Regional & Urban Planning	MGI 512101	Geoinformatics in Regional & Urban Planning Lab
MGI 516081	Mobile Mapping	MGI 512111	Mobile Mapping Lab
MGI 516121	Geoinformatics in Hydrology & Water Resources	MGI 512151	Geoinformatics in Hydrology & Water Resources Lab
MGI 516131	Geoinformatics in Ecology & Forestry	MGI 512161	Geoinformatics in Ecology & Forestry Lab
MGI 516141	Geoinformatics in Agriculture, Soil & Land Evaluation	MGI 512171	Geoinformatics in Agriculture, Soil & Land Evaluation Lab

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

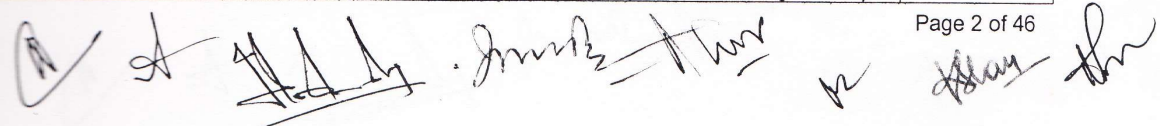
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CENTRE FOR LAND RESOURCE MANAGEMENT

Annexure III

COURSE STRUCTURE FOR FIVE YEAR INTEGRATED M.TECH DEGREE IN APPLIED GEOINFORMATICS

	Code	PAPERS	CREDITS
SEMESTER I (23 Credits)			
THEORY		Communicative English	3
		Environmental Studies	3
		Engineering Physics I	3
		Engineering Chemistry I	3
		Engineering Mathematics I	3
		Engineering Mechanics	3
LAB		Engineering Physics I LAB	1
		Engineering Chemistry I LAB	1
		Engineering Mechanics LAB	1
		Engineering Drawing & Graphics	2
SEMESTER II (24 Credits)			
THEORY		Engineering Physics II	3
		Engineering Chemistry II	3
		Engineering Mathematics II	3
		Fundamental of Computing	3
		Engineering Thermodynamics	3
		Basics of Electrical Engineering	3
		Basics of Electrical Engineering LAB	1
LABS		Engineering Physics II LAB	1
		Engineering Chemistry II LAB	1
		Basics of Electrical Engineering LAB	1
		Workshop Practice	3
SEMESTER III (24 Credits)			
THEORY		Fundamentals of Remote Sensing	3
		Geodesy and Digital Cartography	3
		Geosciences & Image Interpretation	3
		JAVA Programming	3
		Disaster Management	3
		Numerical Methods & Computation Techniques	3
		Geodesy and Digital Cartography Lab	2
LABS		Geosciences & Image Interpretation Lab	2
		JAVA Lab	2
		JAVA Lab	2
SEMESTER IV (23 credits)			
		Geographic Information System	3
		Global Positioning System	3
		Digital Image Processing	3
		Surveying	3
		Geostatistics	3
		Digital Image Processing Lab	2
		GIS Lab	2
LABS		GPS Lab	2
		Surveying Lab	2
		Surveying Lab	2
SEMESTER V (25 credits)			
THEORY		Aerial Photography & Digital Photogrammetry	3
		Spatial Database, Analysis and Modelling	3
		Advanced Remote Sensing Techniques	3
		Geoinformatics in Natural Resource Management	3
		Elective- I (Any one elective offered by CUJ including CLRM)	3



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LAB	Photogrammetry Lab	2
	Spatial Database, Analysis and Modeling Lab	2
	Geoinformatics in Natural Resource Management Lab	2
	Advanced Remote Sensing Techniques Lab	2
	Elective- I Lab	2
LIST OF ELECTIVES I	Mobile Mapping	
	Geoinformatics in Environmental Monitoring	
	Climatology & Satellite Meteorology	
	Fundamental of Geospatial Technology & Application (only for other Centers)	4
	Mobile Mapping Lab	
	Geoinformatics in Environmental Monitoring Lab	
	Climatology & Satellite Meteorology Lab	
SEMESTER VI (22 credits)		
THEORY	Data Mining & Neural Networks	3
	Hydrology and water resources	3
	Geoinformatics in Regional and Urban planning	3
	Ecology & Forestry	3
	Field Visit & Report Writing	2
LABS	Data Mining & Neural Networks Lab	2
	Hydrology and water resources Lab	2
	Regional and Urban Planning Lab	2
	Ecology & Forestry Lab	2
SEMESTER VII (25 credits)		
THEORY	Research Methodology & Project Formulation	3
	Agriculture, Soil & Land Evaluation	3
	Geoinformatics in Disaster Risk Assessment	3
	Geoinformatics for Coastal Zone Management	3
	Geoinformatics for Environmental Monitoring	3
	Field Tour	2
LABS	Agriculture, Soil & Land Evaluation Lab	2
	Geoinformatics in Disaster Risk Assessment Lab	2
	Geoinformatics for Coastal Zone Management Lab	2
	Environmental Monitoring Lab	2
SEMESTER VIII (23 credits)		
THEORY	Web Applications in Geoinformatics	3
	Geoinformatics in Business, Health and Energy	3
	Elective-II	3
LABS	Web applications Lab	2
	Elective-II LAB	2
	B.Tech Project	10
LIST OF ELECTIVES II	Geoinformatics in Cryospheric Studies	
	Geoinformatics in Transportation Planning	
	Land Information System	
	Geoinformatics in Cryospheric Studies Lab	
	Transportation Lab	
	Land Information System Lab	
SEMESTER IX (21 Credits)		
	Thesis (to be contd. in Semester X)	21
SEMESTER X (24 Credits)		
	Thesis	24

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