



COURSE CURRICULUM

Course Title: Research Methodology and Project Management in Geoinformatics

Course Code:

Credit Units: 03

Course Level: PG

Course Objectives:

L	T	P/S	SW/F W	TOTAL CREDIT UNITS
2	1	-	-	3

The objective of this subject is to enable the students to formulate, plan, execute and manage Remote Sensing and GIS based projects .

Pre-requisites: Student should have the basic of sciences and remote sensing.

Student Learning Outcomes:

- Students can plan and formulate a proper plan for writing executing and management of project in the geospatial domain.
- Student can formulate and carry out independent research in the general field of remote sensing, possibly as part of a multi-disciplinary research and development project.

Course Contents/Syllabus:

	Weightage (%)
Module I Introduction to GIS Project Management	

<p>Description/Topics</p> <p>What Is a Project?, Project Attributes, The Triple Constraint, Project Stakeholders, Project Management Knowledge Areas, Project Management Tools and Techniques, Project Success Factors</p> <p>Components of Geoinformatics project. Overview of Geoinformatics projects, types of projects</p> <p>Geo-informatics projects, Corporate or Enterprise GIS, Health GIS, Census GIS, Market/Business GIS, GIS Strategic Plan, Needs Assessment and Requirements Analysis, Organizational Involvement, Evaluating Existing Data, Accuracy, Completeness. Maintenance, Software and hardware Selection, Technical Environment.</p> <p>Problems of GIS research. Identification of problems of regional and Locale level, geographic data sources and natures of data to be used. Hypotheses and Models, Formulation of research schemes.</p> <p>Preparation of research projects and writing of reports, Preparation of field reports, spatial data, classification and sampling problems. Need for sampling, types of sampling, sample size, sampling area. Mapping the Process Groups to the Knowledge Areas; Developing a GIS Project Management Methodology</p> <p>Project phases and Project life cycle, Project Initiation, Project Planning, Project Execution, Project Monitoring and Controlling, Project Closing, Project stakeholders.</p>	<p>20</p>
<p>Module II GIS Research Methodology</p>	
<p>Description/Topics</p> <ol style="list-style-type: none"> 1. Research process. 2. Selection and Formulation of research problem. 3. Literatures survey. 4. Development of working hypothesis research designs. 5. Sampling strategy or sampling designs 6. Pilot study. 7. Data collection. 8. Processing and analysis data. 9. Interpretation and generalization. 10. Preparation of report. <p>Referencing Systems.</p>	<p>20</p>
<p>Module III GIS Project Integration Scope and Time Management</p>	
<p>Description/Topics</p> <p>What is GIS Project Integration Management?, Strategic Planning and Project Selection, Identifying Potential Projects, Methods for Selecting Projects, Project Charters, Preliminary Scope Statements, Project Management Plans, Project Management Plan Contents, Project Planning and Execution, Monitoring and Controlling Project Work</p>	<p>20</p>

<p>Scope Management Scope Planning and the Scope Management Plan, Scope Definition and the Project Scope Statement, Creating The Work Breakdown Structure, Approaches to Developing Work Breakdown Structures, Scope Verification, Scope Control</p> <p>Time Management Importance of Project Schedules, Activity Definition, Activity Sequencing, Dependencies, Network Diagrams, Activity Resource Estimating, Activity Duration Estimating, Schedule Development, Gantt Charts, Critical Path Method, Critical Chain Scheduling, Program Evaluation and Review Technique (PERT), Schedule Control</p>	
<p>Module IV GIS Project Cost Management and Project Quality Management Project Human Resource Management and communication management</p>	20
<p>Description/Topics</p> <p>Cost Management The Importance of Project Cost Management, What Is Cost? What Is Project Cost Management? Basic Principles of Cost Management, Types of Cost Estimates, Cost Estimation Tools and Techniques, Cost Budgeting, Cost Control, Earned Value Management.</p> <p>Project Quality Management What is Project Quality Management?, Quality Planning, Quality Assurance, Quality Control, Tools and Techniques for Quality Control- Pareto Analysis, Statistical Sampling, Six Sigma, Quality Control Charts and the Seven Run Rule Testing</p> <p>Project Human Resource Management Keys to Managing People, Motivation Theories The Importance of Project Communications Management</p>	
<p>Module V Project Risk Management</p>	
<p>Description/Topics The Importance of Project Risk Management, Risk Management Planning, Common Sources of Risk on GIS Projects, Risk Identification, Qualitative Risk Analysis, Quantitative Risk Analysis, Quantitative Risk Analysis, Risk Response Planning, Risk Monitoring and Control</p>	20

Pedagogy for Course Delivery

The course is designed to be taught through the lecture mode and laboratory exercises. However seminar presentations on various themes related to the course and discussion on various case studies. Class room interaction will definitely have to be an integral part of the learning experience.

Lab/ Practicals details, if applicable: N/A

Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	End Term Examination
30 %	NA	70 %

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment					End Term Examination
Components (Drop down)	Class Test	Home Assignment	Presentation	Attendance	EE
Weightage (%)	10	05	10	05	70

Text & References:

- A guide to the Project Management Body Of Knowledge -2000 edition, Project Management Institute, USA
- The Design and Implementation of Geographic Information Systems, John E. Harmon, Steven J. Anderson by Wiley Publishers ISBN: 0-471-20488-9
- Geographic Information Systems, abridged by Paul A Longley, Michael F Goodchild, David J. Maguire, and David W. Rhind, second edition, 2005
- Project Management using PERT / CPM – Weist & Levy, PHI
- Concepts and Techniques of Geographic Information System by C P Lo Albert K W Yeung, 2002, EEEPrantice Hall of India Private Ltd.
- Project Management PERT / CPM & Precedence Diagramming Moder, Philip, Galgotia