

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Geo-Informatics for Planning**  
**SUBJECT CODE: 1055505**  
**B.PLAN 5<sup>th</sup> SEMESTER**

**Prerequisite:** 4<sup>th</sup> Semester Planning

**Aim:** To Study Geo-informatics and it's Potential in Spatial Planning.

**Objective:**

1. To study the concept of Remote sensing and Satellite and Aerial Remote Sensing.
2. To study Planning Information System and its Application in Human Settlements Planning.

**Teaching and Examination Scheme:**

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE (E)	PA (M)	ESE (V)	PA(I)	
2	0	2	4	50	20	30	100	

L- Lectures; T- Tutorial/Teacher Guided Student Activity/Field work; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment.

**Content:**

Sr. No.	Content	Total Hrs
Unit -1	<b>Remote Sensing</b> Limitations of Traditional Surveys for Planning; Remote Sensing - Definition, Aerial and Satellite Remote Sensing, Aerial Remote Sensing	4
Unit -2	<b>Photo Interpretation</b> Aerial Photo-Interpretation, Qualitative and Quantitative Elements of Photo-Interpretation; Satellite Remote sensing, Geo-Stationary and Sun-Synchronous Satellites, Principles of Electro-Magnetic Radiations, Resolutions; Introduction to Digital Image Processing; Salient Features of Popular Remote Sensing Satellites; Applications in Planning; Laboratory Exercises	8
Unit -3	<b>Planning Information Systems</b> Systems Approach to Planning as basis for Planning Information Systems; Systems, Hierarchy, Types; Data and Information, Value of Information, Information Flows, Loops; Information Security and Sharing; Information Systems, Types, Limitations;	6
Unit -4	<b>Human Settlements and Planning Information Systems</b> Human Settlements' Information Needs, Scales and Levels, Pre-Conditions for Using Planning Information Systems; Introduction to various Planning Information Systems	6
Unit -5	<b>Planning Information Systems in India</b> Planning Information Systems -NNRMS, NUIS, National Urban Observatory, Municipal Information Systems, Land Information Systems, Cadastre Systems; Applications and Limitations; Tools for Spatial Data Handling, Introduction to GISs	8

Unit - 6	<b>Need for GIS</b> Maps and Spatial Information, Limitations of Typical DBMS Packages and CAD Packages; Need for GISs.	
Unit - 7	<b>Introductions to GIS</b> Geographic Information Systems, Introduction, Components, Benefits; Computerized GISs, Input and Output Devices; Spatial Data Entry into GIS, Spatial Information Security and Sharing; Data Structure for GIS, Vector and Raster Data Structures, Comparative Advantages and Disadvantages; Maps, Base Maps and Thematic Maps, Mapping and Spatial Analysis Software, Linking of Attribute Data, Spatial Data Aggregation; Spatial Data Generalization; Limitations of GISs	
<b>Total Hrs</b>		64

### Reference Books:

S. No.	Name of Authors	Titles of the Book	Edition	Name of the Publisher
1.	Harsan Karimi	Handbook of Research on Geoinformatics		2009 IGI Global
2.	Victor Mesev	Integration of GIS and Remote Sensing	2007	John Wiley
3.	Murali Krishna	Spatial Information Technoogy – Remote Sensing and GIS -- ICORG – BSP		
4.	Nath&Pandey	Geo-informatics for decentralized planning and governance		Rawat
5	N.M. Naidu	Geo-informatics and Geostatistics	2009	Saujanya Books
6	Michael N. Demers	Fundamentals of Geographic Information Systems		John Wiley
7	Chor Pang Lo, Albert Yeung	Concepts and Techniques of GIS	2007	Prentice Hall

### Course Outcome:

<b>List of Exercises / Practicals:</b>	
1	Visit to Town and Country Planning Organization / Department or Remote Sensing Agencies and Submit Report
<b>List of Assignments/Tests :</b>	
1	Test on Unit 1 and Unit 2.
2	Case study based Assignment on Unit 5.

### List of Experiments:

**ACTIVE LEARNING ASSIGNMENTS:** Preparation of power-point slides, which include videos, animations, pictures, graphics for better understanding theory and practical work – The faculty will allocate chapters/ parts of chapters to groups of students so that the entire syllabus to be covered. The power-point slides should be put up on the web-site of the College/ Institute, along with the names of the students of the group, the name of the faculty, Department and College on the first slide. The best three works should submit to GTU.