COURSE CODE: **GIE-414**

COURSE NAME: **LAND USE PLANNING**

CREDIT HOURS:
Theory = 02
Practical = 01
Total = 03

CONTACT HOURS:
Theory = 32
Practical = 48
Total = 80

PREREQUISITE: **GIE-103**

MODE OF TEACHING:

Instruction:	Two hours of lecture per week	67%
Practical:	Three hours of Lab work per week	33%

COURSE DESCRIPTION:

This course focuses on land use concepts, various techniques of land use and their implementation in accordance with the planning policies. The students will be able to apply remote sensing and GIS knowledge for land use planning.

COURSE OBJECTIVES:

To introduce basic techniques for preparing and applying land use planning policies and implementation tools of land use planning such as zoning and zoning by-laws.

RELEVANT PROGRAM LEARNING OUTCOMES (PLOs):

The course is designed so that students will achieve the PLOs:

1	Engineering Knowledge:	☐	7	Ethics:	☐
2	Problem Analysis:	☑	8	Individual and Collaborative Team Work:	☐
3	Design/Development of Solutions:	☑	9	Communication:	☐
4	Investigation:	☐	10	Project Management:	☐
5	Tool Usage:	☐	11	Lifelong Learning:	☐
6	The Engineer and Society:	☑	12		☐

COURSE LEARNING OUTCOMES:

Upon successful completion of the course, students will be able to:

No.	CLO	Domain	Taxonomy Level	PLO
1	Describe the concepts of land use and land use techniques	Cognitive	2	6
2	Apply land use techniques and Social, Economic and Environmental Impact Analysis in accordance with planning policies.	Cognitive	3	6
3	Analyze the existing land use patterns by applying remote sensing and GIS based techniques in land use planning.	Cognitive	4	2
4	Commit to contribute as a team member build a model housing society using land use techniques.	Affective	3	3

TOPICS COVERED:

Thesis:

Week	Topics
1	Land Use concepts: Spatial dimensions of land use, scales in land use planning
2	Land use concepts: community, regional, city-wide
3- 4	Steps in the plan making process
5	Techniques for land use planning:
6	Principles of planning, land use controls, models, zoning
7	Techniques for land use planning: Zoning by law, minor variance, plans of subdivision
8	Critical analysis of land use zoning of any existing city
9	Mock public meetings
10	Land use classification: Land evaluation,
11	Land use data analysis
12	Critical analysis of land use change analysis of any existing city
13	Land use classification: Mapping techniques
14	Site planning and Engineering, Impact Analysis: Social, Economic and Environmental
15	Use of GIS and Remote Sensing: Pre-feasibility studies, suitable site selection
16	Use of GIS and Remote Sensing: GIS for urban and rural planning, rural land use management
17-18	**ESE**

Practicals:

No.	Topics
1	Preparing a hypothetical model housing society map
2	Designing a hypothetical new town
3, 4	Preparing a plan for some land use project
5-6	Preparing a map of any mega city of Pakistan according to Urban Land Use Models
7-8	Preparing land use zoning map of any mega city of Pakistan
9	Performing land evaluation for some land use project
10-11	Preparing a land use change analysis map of any mega city of Pakistan
12	Discussing impact of any land use project on residents and to find out ways to make improvements by mock public meetings
13	Preparing a post project report of any mega urban project; analyzing its Social, Economic, and Environmental impacts
14-15	Designing a model housing society at any vacant space within a mega city in accordance with land use planning techniques and compare it with hypothetical housing society map prepared at the start of the course
16	Designing a new model town at any vacant space in accordance with land use planning techniques and compare it with hypothetical town map prepared at the start of the course

TEXT AND MATERIAL:

Textbook (s):

a. Land Use Planning and Remote Sensing (Remote Sensing of Earth Resources and Environment) by David T. Lindgren (2010) ISBN: 9048182840.
b. Smart Land-use Analysis: The LUCIS Model (Land-Use Conflict Identification Strategy) by Margaret H.Carr and Paul D. Zwick (2007). ESRI Map. ISBN: 978-1-58948-174-9.

Reference Material:

a. Site Analysis-A Contextual Appoach to Sustainable Land Planning and Site Design by James A. LaGro Jr (2008). John Wiley and Sons, Inc. ISBN: 978-0-471-79798-2.
b. Strategic Environemntal Assessment and Land Use Planning: An International Evaluation. Edited by Carys Jones, Mark Baker, Jeremy Carter, Stephen Jay, Michael Short and Christopher Wood (2005). Earthscan. ISBN: 1-84407-109-3.
c. Land use Modelling in Planning Practice by Eric Koomen, Judith Borsboom-van Beurden, 2011. Springer. The GeoJournal Library Vol 101.
d. Donald Watson, Alan Plattus, Robert Shibley (2011), Time Saving Standards for Urban Design. Tata McGraw-Hill. ISBN-13: 978-1-25-900290-8.
e. GIS in Land and Property Management by Martin P. Ralphs and Peter Wyatt (2003)
f. Edward J. Kaiser, David R. Godschalk, F. Stuart, Jr. Chapin (1995) Urban Land Use Planning, 4th edition University of Illinois Press; ISBN: 0252021010.
g. Town Planning in the Third World by Akhtar K. Bhatti (199). Ferozson (pvt) Ltd. ISBN: 969-0-10127-7.

ASSESMENT SYSTEM:

1. **CLOs Assessment**

Cognitive	**Psychomotor**	**Affective**
Spreadsheet	-	Rubrics

2. **Relative Grading**

Theoretical / Instruction			67%
	Assignments 10%		
	Quizzes 10%		
	Mid Semester Exam 30%		
	End Semester Exam 50%		
Practical Work			33%
Laboratory Work		*70%*	
	Laboratory Assignment70%		
	Semester Project30%		
Viva/Quiz		*30%*	
Total			**100%**