

COURSE CODE: GIE-468

COURSE NAME: LAND INFORMATION SYSTEM

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

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

PREREQUISITE: Nil

MODE OF TEACHING:

Instruction: Two hours of lecture per week 67%

Practical: Three hours of Lab work per week 33%

COURSE DESCRIPTION:

The course is designed to familiarize students with the concepts of cadaster, cadaster system, and land record management system. The current land administration system of Pakistan will be studied in detail. The students will study land administration system of various developing and developed countries. Upon completion of the course, students will be able to compare land administration system of Pakistan with other countries. They will learn how to utilize their geospatial knowledge to improve land record management system of Pakistan.

COURSE OBJECTIVES:

At the end of this course, the learner will be able to understand purposes and procedures of land record management. Students will be able to analyze the present land administration system of Pakistan and to identify the room for GIS based improvement. Students will be able to evaluate the land information systems of developing and developed countries

RELEVANT PROGRAM LEARNING OUTCOMES (PLOs):

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

- | | | | | | |
|---|----------------------------------|-------------------------------------|----|---|--------------------------|
| 1 | Engineering Knowledge: | <input type="checkbox"/> | 7 | Ethics: | <input type="checkbox"/> |
| 2 | Problem Analysis: | <input type="checkbox"/> | 8 | Individual and Collaborative Team Work: | <input type="checkbox"/> |
| 3 | Design/Development of Solutions: | <input checked="" type="checkbox"/> | 9 | Communication: | <input type="checkbox"/> |
| 4 | Investigation: | <input checked="" type="checkbox"/> | 10 | Project Management: | <input type="checkbox"/> |
| 5 | Tool Usage: | <input type="checkbox"/> | 11 | Lifelong Learning: | <input type="checkbox"/> |
| 6 | The Engineer and Society: | <input type="checkbox"/> | | | |

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 record management systems	Cognitive	2	-
2	Analyze the current land record management systems of Pakistan	Cognitive	4	4
3	Analyze the land record management systems of various developing and developed countries and make	Cognitive	4	4

	comparison with that of Pakistan			
4	Produce land record management system for a selected sector/village/town using geospatial technologies	Psychomot or	4	3

TOPICS COVERED:

Theory:

Week	Topics
1	Introduction to Land and Land Administration
2	Introduction to Land Information System
3	Cadastre: Types and Role in Land Administration
4- 5	Land Registration Systems; Property Rights and Adverse Possessions, Land Valuation and Land adjudication
6	Issues in current Land Record Management System of Pakistan
7	Progress conversion of paper based to digital land record and management system of Pakistan, progress and analysis
8-9	Case studies of land record management system of various developing and developed countries
10-11	Technology Development: Cadaster 2014, International Federation of Surveyors (FIG), Land Administration Domain Model (LADM)
12	Development of a geospatial based Land Record Management and Information System
13-14	Plan for conversion of current land record management system of Pakistan to a geospatial based Land Record Management and Information System
15-16	Design of a geospatial based Land Record Management and Information System for Pakistan
17-18	ESE

Practicals:

No.	Topics
1	Creating parcel data using GIS and Remote Sensing
2	Editing parcel data
3	Managing parcel data
4	Managing Land Records
5	Preparing cadaster and land registration maps
6	Identification and analysis of issues in current land record management system of Pakistan
7	Conversion of manual land records to digital form: Geo-referencing of massavi and Index maps of a mouza
8	Conversion of manual land records to digital form: Mosaicking of all massavi maps of a mouza
9	Conversion of manual land records to digital form: Creating a relational database of for a land record register
10	Conversion of manual land records to digital form: Creating a geodatabase linking mouza maps with the attribute information from land record registers
11	Conversion of manual land records to digital form: Designing and development of a land record management and information system using geospatial technologies

TEXT AND MATERIAL:

Textbook(s):

- a. 3D Cadastre in an International Context: Legal, organizational, and technological aspects by Jantien Stoter, and Peter Van Oosterom, 2006, Taylor and Francis, ISBN: 0-8493-3932-4
- b. GIS and Land Records by Nancy Von Meyer, 2004, ESRI Press, ISBN: 1589480775

Reference Books:

- a. Records and Information Management by Patricia C. Franks, 2013, ALA Neal-Schuman, ISBN-13: 978-1-55570-910-5
- b. GIS in Land and Property Management by Peter Wyatt, Martin P. Ralphs, 2003, Spon Press, ISBN: 0415240654
- c. Land Information Management, by Peter F. Dale, John D. McLaughlin, 1998, Oxford University Press, ISBN: 0198584040
- d. Land Administration Guidelines: with special reference to countries in transition by Enschede, the Netherlands. United Nations 1996, New York & Geneva.
- e. Chapter 'Land and Geographic Information Systems' by Grenville Barnes. The Surveying Handbook. Pages: 880-922

ASSESSMENT SYSTEM:**1. CLOs Assessment**

Cognitive	Psychomotor	Affective
Spreadsheet	Rubrics	-

2. Relative Grading

Theoretical / Instruction			67%
	<i>Assignments 10%</i>		
	<i>Quizzes 10%</i>		
	<i>Mid Semester Exam 30%</i>		
	<i>End Semester Exam 50%</i>		
Practical Work			33%
<i>Laboratory Work</i>		70%	
	<i>Laboratory Attendance 20%</i>		
	<i>Laboratory Report 20%</i>		
	<i>Laboratory Quiz 30%</i>		
<i>Viva/Quiz</i>		30%	
Total			100%