



Department of Architecture

Course: MUD 116 -Geoinformatics for Urban Design

Instructors: Dr. Faiz Ahmed

Contact Periods/ week: 03 periods

Time Table: Thursday

Attendance: Min 75% **Min. Passing Marks:** 50% each in Internal & External Assessments

Class: M.U.D I Sem AY -24-25

Internal Assessment: 50

External JURY Exam: 50

Total Marks: 100

Credits: 3

50 % in Aggregate

Objective:

1. To develop an understanding of the land and its designed modifications, with an integration of Earth sciences.
2. To develop understanding and capacity building to use information science in Urban Studies to address various problems of geography, cartography, geosciences and related branches of science and engineering in urban design.

Outcome of the Course:

Students completing this course will be able to:

Understand the basics of geoinformatics, data acquisition, processes and interpretation. Students shall learn the GIS software package over different exercises to understand all the themes discussed in the syllabus.

LECTURE PLAN

WEEK	TOPIC OF CLASS LECTURE & DISCUSSION	Remarks
1	Unit I: Basics of Remote Sensing Concept and Foundation of Remote Sensing, Elements of Photographic System Types of Aerial Photographs: Vertical Photographs, Oblique Photographs, Satellite Imagery.	Lecture/Discussion
2	Unit I: Basics of Remote Sensing Concept and Foundation of Remote Sensing, Elements of Photographic System Types of Aerial Photographs: Vertical Photographs, Oblique Photographs, Satellite Imagery.	Lecture/Discussion
3	Unit II: Photography and Photogrammetry Introduction to Air Photo Interpretation, Photogrammetry for Map Making: Introduction /Definition, Geometric Elements of a Vertical Photograph, Relief Displacement, Ground Control for Aerial Photography	Hands-on Sessions GIS LAB
4	Assessment I	Hands-on Sessions GIS LAB - Test
5	Workshop 1	1. Workshop ~ Invited Expert
6	Unit-III Mapping Processes and Applications Digital Image Processing, Applications: Geologic & Soil mapping, Land-use / Land Cover Mapping. Land use Classification, Agriculture Applications, Forestry Applications, Water resource Applications: Water Pollution Detection, Flood Damage Estimation, Urban & Regional Planning Applications, Wetland mapping.	MID-TERM ASSESSMENT - Portfolio Creation
7	Unit-III Mapping Processes and Applications Digital Image Processing, Applications: Geologic & Soil mapping, Land-use / Land Cover Mapping. Land use Classification, Agriculture Applications, Forestry Applications, Water resource Applications: Water Pollution Detection, Flood Damage Estimation, Urban & Regional Planning Applications, Wetland mapping	Lecture/Hands-on Sessions GIS LAB

8	Mid-term Assessment	MID-TERM ASSESSMENT - Evaluation
9	Workshop 2	2. Workshop ~ Invited Expert
10	Unit - IV Geographical Information Systems (GIS) Geographical Information Systems: Definition, Composition of Geographical Information System, Computer Hardware Module, GIS Software Module, Data Input, Data Storage, Data Output, Database Structures	Lecture/Hands-on Sessions GIS LAB
11	Unit - IV Geographical Information Systems (GIS) Geographical Information Systems: Definition, Composition of Geographical Information System, Computer Hardware Module, GIS Software Module, Data Input, Data Storage, Data Output, Database Structures	Lecture/Hands-on Sessions GIS LAB
12	Unit -V Digital data management and analysis Presentations Workshop Application of GIS & Remote Sensing, Automated Mapping / Facility Management. (AM/FM), 3-D GIS Digital Elevation Model & Digital Terrain Model, Digital Image Processing and Editing: Error Detection and Correction, Geo-Spatial Analysis: Turning Data into Meaningful Information. Comparison of Vector & Raster Methods, Internal G.I.S., Network Analysis, Open GIS	Lecture/Hands-on Sessions GIS LAB
13	Unit -V Digital data management and analysis Presentations Workshop Application of GIS & Remote Sensing, Automated Mapping / Facility Management. (AM/FM), 3-D GIS Digital Elevation Model & Digital Terrain Model, Digital Image Processing and Editing: Error Detection and Correction, Geo-Spatial Analysis: Turning Data into Meaningful Information. Comparison of Vector & Raster Methods, Internal G.I.S., Network Analysis, Open GIS	Lecture/Hands-on Sessions GIS LAB
14	Review of submissions and documentation – Assessment III	Hands-on Sessions GIS LAB
15	Review of submissions and documentation – Assessment III	Students Presentation
16	Review of submissions and documentation – Assessment III	Students Presentation
S. No.	Stages of Evaluation	Weightage
1	First stage: Assessment –1	15
2	Second stage: Mid-semester Examination	20
3	Third stage: Assessment –3	15
	Total	50

References:

1. G.S Srivastava - 'An Introduction to Geo-informatics', McGraw Hill Education (India) Pvt. Ltd, 2014.
2. Goodchild M.F. and Kemp K-'Developing a curriculum in GIS: The NCGIA Core Curriculum Project', University of California, Santa, Barbara 1990.
3. Heywood I, et al, An Introduction to Geographical Information System, Longman, New Delhi, 1998.
4. Ian Haywood Cornelius and Steve Carver - An introduction to GIS, Longman, New York, 2000.
5. Lo CP & Young AKW, Concepts & Techniques of Geographical Information System, Prentice Hall of India, New Delhi - 2003.
6. Misra HC - A Handbook on GIS, GIS India, Hyderabad, 1995.
7. Smith T.R. and Piquet, GIS, London Press, London, 1985.
8. Taylor DRF-GIS: The Microcomputer and Modern Cartography, Pergamon Press, Oxford, 1991.

Course Instructors:

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Dr. Faiz Ahmed C

Head of Department:

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