University of Management and Technology
School of Architecture & Planning

Semester Spring 2023

Course Outline

Course code: 138 Course title: Introduction to GIS

Program	BS CRP	
Credit Hours	2+1	
Duration	16 weeks	
Prerequisites	None	
Resource Person		
Counseling Timing		
Contact		

Chairman/Director signature……..

Dean's signature…… **Date……..**

Learning Objective:

The main motivation behind this course is the need of GIS that exist in every imaginable discipline, from environmental science to mining to urban planning to commercial businesses to defense. Practitioners use GIS to visualize, analyze, and formulate model and systems to help in the planning and decision-making processes of their organizations. Spatial Data Management with the help of GIS Tools. Explore ways of information displaying through satellite imageries of a specific place with the help of GIS. Have a basic, practical understanding of GIS concepts, techniques and real world applications.

Learning Methodology:

- Lecturing
- Written Assignments
- Guest Speaker
- Field surveys
- Report Writing
- Term Project Submission

Grade Evaluation Criteria

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

Recommended Text Books:

Mastering ArcGIS Book by MARIBETH H. PRICE

PROGRAM EDUCATIONAL OBJECTIVES (PEOS)

Five years after graduating, the graduates of the program should be characterized by the following three features:

PEO-1:

The graduates will apply learnt knowledge and skills of spatial, temporal, and physical planning.

PEO- 2:

The graduates will propose and execute appropriate solutions to complex planning and urban issues and adapt recent developments in planning focusing on research, creativity, and innovation.

PEO-3:

The graduates will reflect core ethical values in their professional conduct and become responsible members of society.

PROGRAM LEARNING OUTCOMES (PLOS) / GRADUATE ATTRIBUTES

Graduates of the BS CRP program at UMT are expected to have acquired and developed the following set of knowledge, skills and personality traits (these are also referred to as graduate attributes)

PLO 1: Planning Knowledge

An ability to demonstrate knowledge of contemporary planning theories and conceptual ideologies and models.

PLO 2: Designing Analysis

An ability to identify and investigate problems, construct theoretical framework through literature review and case studies and synthesize information.

PLO 3: Professional Skills

Apply planning knowledge in design/planning process to synthesize and articulate multi-faceted variables to generate an integrated solution based on societal and environmental considerations.

PLO 4: Usage of IT

An ability to select and apply appropriate techniques and resources, including prediction and modelling, to complex planning activities.

PLO 5: Communication

Convey ideas and solutions of planning/urban problems in verbal, written and graphical modes, effectively.

PLO 6: Leadership

Ability to opt a role for affective coordination within the team & collaboration with the community.

PLO 7: Professional Ethics

An ability to apply ethical principles and professional codes following the social norms to the best interest of the society.

PLO 8: Lifelong Learning

Capable of acquiring knowledge, skill, and information self-reliantly from diverse sources and appreciating new ideas and concepts.

Course Learning Outcomes (CLOs)

- Understand the theoretical background of Introduction to GIS (C-1)
- Hands on practice on ArcMap 10.2 (C-3)
- Practice basics to utilize GIS skills in planning profession (A-5)

Tittle	Course Learning Outcomes	PLO 1: Planning Knowledge	PLO 2: Designing Analysis	PLO 3: Professional Skills	PLO 4: Usage of IT	PLO 5: Communication	PLO 6: Leadership	PLO 7: Professional Ethics	PLO 8: Lifelong Learning
Introduction to GIS	1. Understand the theoretical background of Introduction to GIS								✓
	2. Hands on practice on ArcMap 10.2				✓				
	3. Practice basics to utilize GIS skills in planning profession			✓					

CODE	NAME	CLO	CLO Type
138.1	138.C1	Recognize the theoretical background of Introduction to GIS	C1
138.2	138.C2	Hands on practice on ArcMap 10.2	C3
138.3	138.C3	Practice basics to utilize GIS skills in planning profession	A5

Calendar of Course contents to be covered during semester

Course code: CRP-138 Course title: Introduction to GIS

Week	Course Contents	Weeks	CLO
1	What is GIS? GIS Data	1st Week	1
2	Managing GIS Data	2nd Week	1,2
3	Coordinate Systems	3rd Week	1,2
4	Mapping GIS Data	4th Week	1,2
5	Presenting GIS Data	5th Week	1,2
6	Attribute Data	6th Week	1,2

7	Basic Editing Mid Term Project Submission	7th Week	1,2,3
8	Mid Exam	8th Week	
9	Queries	9th Week	1,2
10	Spatial Join	10th Week	1,2
11	Map Overlay and Geoprocessing	11th Week	1,2
12	Raster Analysis	12th Week	1,2
13	Editing and Topology	13th Week	1,2,3
14	Geodatabases	14th Week	1,2

15	Metadata Submission of Term Project and Viva	15th Week	1,2,3
16	Final Exam	16th Week	