Department of City & Regional Planning,

School of Architecture & Planning,

University of Management and Technology

Course Outline – GIS Analysis and Application in Planning

UMT Vision:

OUR VISION IS LEARNING!

It defines our existence, inspires all stakeholders associated with us, creates a powerful momentum inside, and responds to the challenges outside. It continues to evolve as present captures new realities and foresight unfolds new possibilities.

All in an incessant attempt to help individuals and organizations discover their God-given potentials to achieve Ultimate Success actualizing the highest standards of efficiency, effectiveness, excellence, equity, trusteeship and sustainable development of global human society.

UMT Mission

OUR MISSION IS LEADING

We aspire to become a learning institution and evolve as the leading community for the purpose of integrated development of the society by actualizing strategic partnership with stakeholders, harnessing leadership, generating useful knowledge, fostering enduring values, and projecting sustainable technologies and practices.

Vision and Mission Statements of the City & Regional Planning Department

The vision statement of the Department of City & Regional Planning is:

- To be a leading City & Regional Planning Department aiming for excellence in learning, research and innovation with integrity and equity.

The mission of the Department of City & Regional Planning is:

- The mission is to establish a very important program concerning the development and management of the built environment. This is entitled as Bachelor of Science in City and Regional Planning. The studies will be focused on needs of the nation in the field of built environment of our regional, urban and rural settlements. The students are required to be equipped with knowledge of advanced skills, latest knowledge and technology used in the planning and management of various settlements. They need to be fully aware of the current world, new trends and direction of the developments in future.

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 and review of existing GIS applications for problems identification.
- Use of GIS applications for plan implementation and monitoring.
- Learn mapping software's with advance analytical skills.

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
GIS Application in Planning & Analysis	1. Understand and review of existing GIS applications for problems identification	✓							
	2. Use of GIS applications for plan implementation and monitoring			✓					
	3. Learn mapping software's with advance analytical skills				✓				

CODE	NAME	CLO	CLO Type
328.1	328..C1	1. Understand and review of existing GIS applications for problems identification	C2

328..2	328..C2	2. Use of GIS applications for plan implementation and monitoring	A2
328.3	328.C3	3. Learn mapping software's with advance analytical skills	P3

PROGRAM	**Bachelor of City & Regional Planning**
COURSE	**CRP-328 GIS Analysis and Application in Planning**
CREDIT HOURS	1 + 2
LECTURE SCHEDULE	
PREREQUISITES	None
RESOURCE PERSON	
CONTACT	

Course Outline GIS Analyzing and Application in Planning

LECTURE WEEKS	CLO	TOPICS TO BE COVERED
WEEK 1	1	Hotspot Analysis
WEEK 2	1, 4	Land Suitability Analysis (Weighted Overlay)
WEEK 3	1, 4	Regression Analysis
WEEK 4	4	Land Suitability Analysis (AHP)
WEEK 5	4	Molusce Plugin
WEEK 6	4	Supervised Classification
WEEK 7	4	Urban Growth Prediction
WEEK 8		**MID TERM EXAMINATION**
WEEK 9	1	Google Earth Engine Introduction
WEEK 10	4	NDVI, NDBI Calculation
WEEK 11	1, 4	LULC change in Google Earth Engine
WEEK 12	4	Flood Assessment in Google Earth Engine
WEEK 13	4	Flood Assessment in Google Earth Engine
WEEK 14	4	OPEN STREET MAP DATA
WEEK 15		ASSESSMENT + Report Submission + POSTERS

WEEK 16		FINAL EXAMS

Evaluation Criteria

Marks Evaluation	Marks in percentage
Projects + Assignments	50%
Mid Term	10%
Attendance & Quiz	20%
Final exam	20%
Total	**100%**