Department of City & Regional Planning,
School of Architecture & Planning,
University of Management and Technology

Course Outline – Information Technology & Database Management

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 developments in future.

	University of Management & Technology School of Architecture & Planning Department of City & Regional Planning		

Information Technology & Database Management (CRP-243)			
Course Schedule		**Semester**	Spring 2023
Pre-requisite	None	**Credit Hours**	3 (1+2)
Resource Person (s)			
Office			
TA			
Course Description	This course will equip students with the basic skills and techniques of Information Technology and will enable them to use these skills to develop database in planning projects.		

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:

After studying this course, the learners will be able to:

- Define and describe the terms IT and database.
- Understand the basic principles, elements, and types of information technology as well as database management.
- Use data and information in CRP projects.
- Use Microsoft Excel and Tableau Public.

CODE	NAME	CLO	CLO Type
243.1	243.C1	Define and describe the terms IT and database	A3
243.2	243.C2	Understand the basic principles, elements, and types of information technology as well as database management	C2
243.3	243.C3	Use data and information in CRP projects	C3
243.4	243.C4	Use Microsoft Excel and Tableau Public.	C3

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
Information Technology & Database Management	Define and describe the terms IT and database.	✓							
	Understand the basic principles, elements, and types of information technology as well as database management.	✓							
	Use data and information in CRP projects.			✓					
	Use Microsoft Excel and Tableau Public.				✓				

Proposed Teaching Methodology
- Lectures
- Videos
- Assignments
- Field Visits
- Case studies

Week	Course Contents	CLO	Weeks
1	Introduction to the IT and DBM Practical: Introduction to Microsoft Excel	1	1st Week

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2	Relational Database Management System Practical: How to create a Chart in Excel	1,4	2nd Week
3	Practical: CountIF Queries and Conditional Formatting in Excel	4	3rd Week
4	Introduction to types of Datasets Practical: Correlation Matrix	2,4	4th Week
5	Introduction to Pivot Table Practical: Pivot Table Formulation	1,4	5th Week
6	Introduction to Descriptive Statistics Practical: Generation of Report based on Descriptive Statistics	1,4	6th Week
7	Data Normalization Practical: How to Assigned Weights and Normalized Data in a specific range	1,4	7th Week
8	Mid Exam		8th Week

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9	Introduction to Tableau Public Practical: How to Import Data in Tableau Public	2,3	9th Week
10	Practical: How to Improve Visualization in Tableau Public Project Details: Prepare a Dashboard on the Tableau Public based on multiple datasets	2	10th Week
11	Introduction to NVIVO Practical: How to handle Qualitative Data	2	11th Week
12	Qualitative and Quantitative Data Practical: How to Map Qualitative Data in NVIVO	1,3	12th Week
13	Build Charts in NVIVO	2	13th Week
14	Guest Speaker		14th Week

15	Submission of Term Project and Viva		15th Week
16	Final Exam		16th Week

Proposed Assessment (theory, 100%)

    Mid Term (40%)
- Written long/short questions, quizzes etc.

    Final Term (60%)
- Written long/short questions, quizzes etc.

Proposed Assessment (practical, 100%)
- Presentations, assignments, report writing, viva voce, field visits etc.

Recommended Text Book

1. Jeffrey A. H., Ramesh V., Heikki T. (2010), Modern Database Management ISBN-10:0136088392.
2. Carlos C., Steven M., Peter R. (2009), Database Systems: Design, Implementation and Management. ISBN-10: 0538748842.
3. Sikander, P. K. et al., Computer Use in Planning and Urban Management, New Delhi: Naosa Publishing House.
4. C. J. Date (2004), Database Systems, Addison Wesley Pub. Co. ISBN – 0201385902.
5. R. Connolly and P. Begg (2003), Database Systems: A Practical Approach to Design, Implementation and Management, Addison-Wesley Pub. Co. ISBN – 0321210255 34.
6. Elmasri, R. and Navathe, S. B (2004), "Fundamentals of Database Systems" AddisonWesley Pub. Co ISBN – 0-201760355.
7. Mark L. Gillenson (2005), Fundamentals of Database Management Systems John Wiley & Sons.
8. Les Kirkup (2002), Data Analysis with Excel®: An Introduction for Physical Scientists Cambridge University Press.
9. Terry Halpin (2001), Information Modeling and Relational Databases: From Conceptual Analysis to Logical Design (Morgan Kaufmann Series in Data Management Systems) Morgan Kaufmann ISBN: 1558606726.