

Course Outline

**Department of Management
School of Business and Economics**

**MIST 3630-3
Data and Knowledge Management for Business (3,0,0)**

Calendar Description

Students obtain a theoretical and practical understanding of how to manage one of the most important assets of an organization: the data and knowledge. Issues relating to the analysis, development, maintenance, and retention of information required for various organizational needs, and the fundamentals of how to implement solid knowledge management practices are examined. Topics include an overview of data and knowledge management; modeling data in the organization; logical database design and the relational model; physical database design; data processing for business intelligence; data analysis and reporting; and managing organization data and knowledge.

Educational Objectives/Outcomes

Upon completing this course, students will be able to:

1. Understand the key role of data management in business operations and strategic decision making.
2. Describe enterprise-wide data models.
3. Develop logical database models.
4. Design physical database models.
5. Use data warehousing and mining techniques to support decision making.
6. Represent data and knowledge using a variety of reporting tools.
7. Identify organizational knowledge management goals and needs.
8. Manage different sources of organizational knowledge.

Prerequisites

CMNS 1290; MIST 2610

Co-requisites

None

Texts/Materials

Hoffer, Jeffrey, Ramesh, V., Topic, Heikki, Modern Database Management, 4th Edition, Prentice Hall.

Pasher, Edna, Ronen, Tuvya, The Complete Guide to Knowledge Management: A Strategic Plan to Leverage Your Company's Intellectual Capital, 1st Edition, Wiley.

Student Evaluation

Participation	0%-10%
Tests/quizzes	20%-30%
Case studies/research projects/assignments	20%-30%
Final exam	30%-45%

Students must pass the final exam to pass the course.

Course Topics

1. Introduction
 - What is Data Management?
 - What is Knowledge Management?
 - What is Data Modeling?
 - Traditional File Processing Systems
 - Evolution of Database Systems
 - Data Definition and Naming Conventions
2. Modeling Data in the Organization
 - Overview of the Entity-Relationship Model (E-R Model)
 - Modeling the Business Rules of the Organization
 - Data Names and Definitions
 - Modeling Entities and Attributes
 - Modeling Relationships
 - Degree of a Relationship
 - Cardinality Constraints
 - Overview of the Object-Oriented Data Model
3. The Logical Database Design and the Relational Model
 - Transforming E-R Diagrams into Relations
 - Functional Dependencies and Normalization
 - Merging Relations
4. Physical Database Design
 - Transforming a Data Model into a Database Design
 - Representing Entities with the Relational Models
 - Representing Relationships
 - Denormalization
5. Data Processing for Business Intelligence
 - Data Warehousing
 - Data Mining
 - Managing Data Exchange

6. Data Analysis and Reporting

- Reporting Systems
- Data Visualization
- Big Data Analysis

7. Managing Organizational Data and Knowledge

- Determining Organizational Knowledge Management Goals and Needs
 - Transaction Management
 - Maintaining Data Quality
- Data Integration and Protection
- Cloud Data Storage

8. Knowledge Management

- The Impact of Web on Knowledge Management
- Social Networks and Knowledge Management
- Locating Information Sources in the Organization
- Compiling and Circulating the Knowledge
- Knowledge Creation and Sharing
- Knowledge Management Resources and Tools

Methods for Prior Learning Assessment and Recognition

As per TRU policy

Attendance Requirements – Include if different from TRU Policy

As per TRU policy

Special Course Activities – Optional

Use of Technology – Optional