KOCW Content Development Application

<table>
<tr><td rowspan="3">Applicant</td><td></td><td colspan="3">Faculty: Endicott College of International Studies
Department & Major: Technology Studies</td></tr>
<tr><td>Name</td><td>Dr. Hasan TINMAZ</td><td>Position</td><td>Assist. Prof. Dr.</td></tr>
<tr><td>Contact</td><td></td><td>E-mail</td><td></td></tr>
<tr><td rowspan="4">Content</td><td>Subject</td><td colspan="3">Database Management Essentials</td></tr>
<tr><td>Credit</td><td colspan="3">3 Credits</td></tr>
<tr><td>Field</td><td colspan="3">Liberal Arts ( ) Social Science ( ) Engineering (O)
Natural Science ( ) Education ( )
Medicine or Pharmaceutical Study ( ) PE or Art ( )</td></tr>
<tr><td>Outline of the Class</td><td colspan="3">‘Database Management Essentials’ course focuses on the development and management of efficient and effective database applications which require understanding the fundamentals of database management systems, techniques for the design of databases, and principles of database administration. While relational database systems are the main focus, practical design of databases and developing database applications using modern software tools will be emphasized.</td></tr>
<tr><td>Weeks</td><td colspan="3">(10) Weeks</td></tr>
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I submit this document for the KOCW Development Project.

2021.04.22

Applicant: Dr. Hasan TINMAZ (Sign)

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KOCW Content Development Application

1. Outline

가. Name of a Class

Class Name	Database Management Essentials		
Semester	Second semester of 2021	Division	Major (O) Liberal Art ( )

나. Goal of a Class

(1) Goal of a Class :

Upon successfully completing this course, the student will:

- Understand the fundamentals of relational database systems including: data models, database architectures, and database manipulations
- Understand the theories and techniques in developing database applications and be able to demonstrate the ability to build databases using enterprise DBMS products.
- Be familiar with managing database systems.
- Understand new developments and trends in databases.

(2) Introduction :

'Database Management Essentials' course focuses on the development and management of efficient and effective database applications which require understanding the fundamentals of database management systems, techniques for the design of databases, and principles of database administration. While relational database systems are the main focus, practical design of databases and developing database applications using modern software tools will be emphasized.

2. Weekly Plan

Week	Content(Topic)	Learning Objective	How to Operate		
			Methodology	Material	Reference
1	Database concepts and systems	After completing this lecture, students will be able to: • Define the difference between data and information • Describe what a database is, the various types of databases, and why they are valuable assets for decision making • Explain the importance of	Introduction to the course. Lecture and discussions on fundamental database concepts/	PPT	Coronel, C. & Morris, S. (2019). Database Systems Design Implementation and Management, Cengage Learning.

		database design • Understand flaws in file system data management • Outline the main components of the database system • Describe the main functions of a database management system (DBMS)			
2	Data models	After completing this lecture, students will be able to: • Discuss data modeling and why data models are important • Describe the basic data-modeling building blocks • Define what business rules are and how they influence database design	Lecture and discussions on alternative data models.	PPT	Coronel, C. & Morris, S. (2019). Database Systems Design Implementation and Management, Cengage Learning.
3	Relational database model	After completing this lecture, students will be able to: • Describe the relational database model's logical structure • Identify the relational model's basic components and explain the structure, contents, and characteristics of a relational table • Use relational database operators to manipulate relational table contents • Explain the purpose and components of the data dictionary and system catalog	Lecture and discussions on fundamentals of relational data models and examples.	PPT	Coronel, C. & Morris, S. (2019). Database Systems Design Implementation and Management, Cengage Learning.
4	Entity relationship (ER) modeling 1	After completing this lecture, students will be able to: • Identify the main characteristics of entity relationship components • Describe how relationships between entities are defined, refined, and incorporated into the database design process • See how ERD components affect database design and	Lecture and discussions on entity relationship (ER) model and examples.	PPT	Coronel, C. & Morris, S. (2019). Database Systems Design Implementation and Management, Cengage Learning.

		implementation.			
5	Entity relationship (ER) modeling 2	After completing this lecture, students will be able to draw an entity relationship (ER) diagram based on given business rules.	Practical lecture on how to draw an ER diagram step by step.	PPT	Coronel, C. & Morris, S. (2019). Database Systems Design Implementation and Management, Cengage Learning.
6	Extended Entity Relationship (ER) Model	After completing this lecture, students will be able to: • Describe the main extended entity relationship (EER) model constructs and how they are represented in ERDs and EERDs • Use entity clusters to represent multiple entities and relationships in an entity relationship diagram (ERD).	Lecture and discussions on extended ER models.	PPT	Coronel, C. & Morris, S. (2019). Database Systems Design Implementation and Management, Cengage Learning.
7	Database normalization	After completing this lecture, students will be able to: • Explain normalization and its role in the database design process • Identify and describe each of the normal forms: 1NF, 2NF, 3NF, BCNF, and 4NF • Explain how normal forms can be transformed from lower normal forms to higher normal forms • Apply normalization rules to evaluate and correct table structures.	Lecture and discussions on database normalization.	PPT	Coronel, C. & Morris, S. (2019). Database Systems Design Implementation and Management, Cengage Learning.
8	Database design	After completing this lecture, students will be able to: • Describe the role of database design as the foundation of a successful information system • Describe the five phases in the Systems Development Life Cycle (SDLC)	Lecture and discussions on how design a database from early stages to final implementation.	PPT	Coronel, C. & Morris, S. (2019). Database Systems Design Implementation and Management, Cengage Learning.

		• Design databases using the six phases in the Database Life Cycle (DBLC) framework • Conduct evaluation and revision within the SDLC and DBLC frameworks • Distinguish between top-down and bottom-up approaches in database design • Distinguish between centralized and decentralized conceptual database design.			
9	Basics of MS-Access database software	After completing this lecture, students will be able to perform basic operations on MS-Access.	Practical lecture on the basics of MS-Access	PPT + MS Access files	---
10	Introduction to Structured Query Language (SQL)	After completing this lecture, students will be able to write SQL codes.	Practical lecture on the fundamentals of SQL.	PPT + SQL files	---

※ You can freely complete the content sections based on the feature of the class.

3. How are you going to use your class?

For a credit class ( ), For a non-credit class ( ), For a public view (O)

4. Expected Outcome

We are using databases in our daily lives, both personally and professionally. Therefore, understanding the database management will bring many advantages to anyone. At the end of this course, the students will be able to understand the development and management of effective database applications. The students will comprehend the most common database model; relational database systems in theory and in practice. Moreover, the students will have necessary knowledge and skills toward assessing the quality of a database.