113-1 Full Curriculum of Da-Yeh University

Information			
Title	Database	Serial No./ID	0390 /IFI3027
Required/Credit	Required /3	Time/Place	(Mon)567 /H708
Language	Chinese/English	Grade Type	Number
Lecturer /Full- or Part-time	Andy S. Chiou /Full-time	Graduate Class	Non-graduating Class
School System /Dept /Class, Grade	Bachelor /Department of Computer Science and Information Engineering /Class 1, Grade 3		
Office Hour / Place	(Tue) 13:20~14:10, (Tue) 14:20~15:10, (Wed) 13:20~14:10, (Wed) 14:20~15:10 / H713		
Lecturer	n.a.		

Introduction

The goal of this course is to provide the students with the basic concepts of database systems. The main topics include entity-relationship data model, relational data model, relational algebra, views, query formulation with SQL, normalization, logical and physical database design.

Outline

Databases and Database Users
Database System Concepts and Architecture
Data Model Using the Entity-Relationship (ER) Model
The Enhanced Entity-Relationship (EER) Model
The Relational Data Model and Relational Database Constraints
Relational Database Design by ER- and EER-to-Relational Mapping
The Relational Algebra
SQL-99: Schema Definition, Constraints, Queries, and Views
Introduction to SQL Programming Techniques
Functional Dependencies and Normalization for Relational Databases
Relational Database Design Algorithms and Further Dependencies

Prerequisite

C++ Programming
Data Structures

The Relationship Between Courses and Departmental Core Competencies and Basic Skills

- 1.2 Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
- 2.1 Ability to design and conduct experiments, as well as to analyze and interpret data
- 2.2 Ability to propose, conduct, and write the reports of a research project
- 2.3 Ability to dedign and integrate the systems
- 3.1 Ability to cooperate supportively with others and communicate effectively
- 3.3 Ability to engage in life-long learning
- 1.1 Knowledge of mathematics and physics for the application of information engineering
- 3.2 Understanding of engineering ethics and international vision

Teaching Plan						
Core Capability	Weight(%)【A】	Ability index(Performance Indicators)	Teaching Methods	Assessment and Weight	Core Competency Learning Outcomes【B】	Final Exam Grades【C=B*A】
1.2 Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	40	The practical abilities	Case Study Lecturing Practical Operation (Experiment, Machine Operation	Homework Assignment: 20% Record on Experiment: 20% Final Exam: 20% Midterm Exam: 20% Experiment Operation: 20%	Total: 100	40
2.1 Ability to design and conduct experiments, as well as to analyze and interpret data	25	The professional abilities	Lecturing Case Study Practical Operation (Experiment, Machine Operation	Final Exam: 20% Midterm Exam: 20% Homework Assignment: 20% Experiment Operation: 20% Record on Experiment: 20%	Total: 100	25
2.2 Ability to propose, conduct, and write the reports of a research project	5	The practical abilities	Lecturing Case Study Practical Operation (Experiment, Machine Operation	Midterm Exam: 20% Final Exam: 20% Record on Experiment: 20% Homework Assignment: 20% Experiment Operation: 20%	Total: 100	5
2.3 Ability to dedign and integrate the systems	5	The professional abilities	Case Study Lecturing Practical Operation (Experiment, Machine Operation	Record on Experiment: 20% Homework Assignment: 20% Final Exam: 20% Midterm Exam: 20% Experiment Operation: 20%	Total: 100	5

3.1 Ability to cooperate supportively with others and communicate effectively	5	The basic abilities	Case Study Lecturing Practical Operation (Experiment, Machine Operation	Record on Experiment: 20% Homework Assignment: 20% Final Exam: 20% Midterm Exam: 20% Experiment Operation: 20%	Total: 100	5
3.3 Ability to engage in life-long learning	5	The basic abilities	Case Study Lecturing Practical Operation (Experiment, Machine Operation	Record on Experiment: 20% Homework Assignment: 20% Final Exam: 20% Midterm Exam: 20% Experiment Operation: 20%	Total: 100	5
1.1 Knowledge of mathematics and physics for the application of information engineering	10	The professional abilities	Lecturing Case Study Practical Operation (Experiment, Machine Operation	Midterm Exam: 20% Final Exam: 20% Homework Assignment: 20% Oral Report: 20% Experiment Operation: 20%	Total: 100	10
3.2 Understanding of engineering ethics and international vision	5	The basic abilities	Lecturing Case Study Practical Operation (Experiment, Machine Operation	Midterm Exam: 20% Final Exam: 20% Homework Assignment: 20% Record on Experiment: 20% Experiment Operation: 20%	Total: 100	5

Grade Auditing

Homework Assignment: 20%
Midterm Exam: 20%
Final Exam: 20%
Experiment Operation: 20%
Record on Experiment: 18%
Oral Report: 2%

Book Type (Respect intellectual property rights. Please use official textbooks and do not illegally photocopy others' works.)		
Book Type	Book name	Author
Textbook	SQL Server 2019/2017資料庫設計與開發實務	陳會安

Lesson Plan		
Weeks	Content	Teaching Methods
1	Intellectual Property Protection(use legitimate textbooks only) & Traffic safety Propaganda & Intellectual Property Protection (use legitimate textbooks only) & Traffic safety Propaganda & Gender equality education promotion	Lecturing
2	Relational Data Model	Lecturing
3	Entity Relation Model and Normalization	Lecturing
4	SQL Server Database Management System	Lecturing
5	SQL Syntax and Building Database	Lecturing
6	Building Tables and Constraints	Lecturing
7	Advanced SELECT Command	Lecturing
8	Insert, Update, and Delete Data	Lecturing
9	Midterm Exam	Lecturing
10	Building Views	Lecturing
11	Planning and Building Index	Lecturing
12	Transact-SQL Programming	Lecturing
13	Stored Procedures	Lecturing
14	Stored Procedures	Lecturing
15	Triggers	Lecturing
16	Transactions	Lecturing
17	Implementation of Database Project & Flexible Teaching/Learning	Flexible Teaching - Independent Action
18	Implementation of Database Project & Flexible Teaching/Learning	Flexible Teaching - Independent Action