Date Prepared: 01/14/2020

ROCKFORD UNIVERSITY 1847

CSCI 354-01 Database Management Systems

COURSE SYLLABUS: Spring 2020

INSTRUCTOR INFORMATION

Instructor: Dr. Donghwoon Kwon

Office Location: Starr 302D
Office Hours: Mon & Wed: 10AM-11:50AM / Tue & Thr: 11AM-11:50AM
Office Phone: 815-226-4056
Office Fax: 815-394-5166

University Email Address: dkwon@rockford.edu

Preferred Form of Communication: Email
Communication Response Time: Within 24 hours

COURSE INFORMATION

Course Description

This course emphasizes the use of database methods in designing and implementing solutions to business systems problems. Fourth generation programming techniques will be employed in application development on both mainframe and microcomputers. Also stressed will be basic knowledge in data structures, normalization of data, data modeling and the theory of database development and utilization. Scheduled: Spring yearly or as needed, Meets: MNO

Course Objectives

- To develop an understanding of Database structures, implementation, maintenance, and operations.
- To understand the various models used in both a micro-computer and mainframe environment.

Credit Hours: 4

Prerequisite: Junior standing and CSCI220

The *syllabus is subject to change.*

Class Type: Lecture & Lab

Class Hours: Tue and Thr 9:00AM – 10:50AM at Starr Science Hall, Room 104D

Textbook(s) Recommended

- **Murach, Joel. Murach's MySQL 2ed. Mike Murach & Associates,** 2015. ISBN: 978-1-890774-82-0
- Instructor's own materials will be regularly and electronically provided.

Software Required

- *MySQL Workbench*. You can download this software from https://dev.mysql.com/downloads/workbench/. If you have a difficulty to download and install this software, please contact the instructor.
- *phpMyAdmin* and *Atom* for php coding.

Optional Texts and/or Materials

- Students are highly encouraged to bring a laptop and flash drive

Student Learning Outcomes

Students will be able to

1. Install, configure, and interact with a relational database management system.
2. Describe, define and apply the major components of the relational database model to database design.
3. Learn and apply SQL(language) for database definition and manipulation.
4. Utilize a database modeling techniques for a single entity class, a one-to-one (1:1) relationship between entity classes, a one-to-many (1:M) relationship between entity classes, a many-to-many (M:M) relationship between entity classes.
5. Define, develop and process single entity, 1:1, 1:M, and M:M database tables.
6. Learn web database programming fundamentals by developing an application program interface (API) to access and maintain a relational database
7. Learn and implement the principles and concepts of information integrity, security and confidentiality
8. Apply ethical computing concepts and practices to database design and implementation

Topical Outline

- Topic 1: Introduction to MySQL database management software installation and configuration (MySQL)
- Topic 2: Overview of database development focusing on ER diagrams
- Topic 3: Introduction to relational databases and SQL
- Topic 4: Retrieving (querying) from a single table
- Topic 5: Multiple relation (table) queries
- Topic 6: Table creation and updating
- Topic 7: Summary queries and subqueries
- Topic 8: Database design
- Topic 9: Managing database objects

The *syllabus is subject to change.*

- Topic 10: PHP and MySQL
- Topic 11: User administration and security

COURSE REQUIREMENTS

Instructional Methods

1. Lectures: Important materials from the text and outside sources will be covered in class. Students should plan to take careful notes as not all materials can be found in the texts or readings.

2. Labs: Based on lectures, lab exercises will be given to students. Students are required to complete lab exercises, and the discussion is highly encouraged.

3. Assignments: Programming and / or general assignments will be regularly given to students.

4. Quizzes: Occasional announced quizzes will be given to help ensure students keep up with assigned materials.

5. Exams: Two exams will be given. The midterm covers topics from week 1-6, and the final covers topics from week 7-thelast week of class.

6. Term Project: Group term project will be given to students.

GRADING

Final grades in this course will be based on the following scale:

% of Total Points	Grade
87% - 100%	**A**
77% - 86.9 %	**B**
67% - 76.9%	**C**
57% - 66.9%	**D**
Below 57%	**F**

Category	Percentage
Midterm	**20%**
Final Exam	**20%**
Assignments	**10%**
Quizzes	**10%**
Term Project	**35%**
Attendance	**5%**

COURSE SPECIFIC PROCEDURE / POLICY

1. ***Assignments***: All assignments **MUST** be turned in by the assigned deadlines. All assignments are due at the time specified. Please keep in mind that ***NO LATE WORK*** will be accepted. All assignments must be placed in the appropriate Dropbox on Canvas.

2. ***Examination Makeup Policy***: If a student is absent from an exam during the scheduled time for that exam, the student will automatically receive a grade of 0 for the exam unless:

a. the student notifies the instructor of the absence before 24 hrs of the exam and supplies a written doctor's excuse or any other official documents explaining the absence, or

b. there is an extraordinary situation which the instructor allows as an acceptable excuse (instructor needs to be notified before 24 hrs of the exam). If (a) or (b) applies, arrangements for a makeup exam will be made.

It will be the responsibility of the student to show written documentation supporting the absence, from

your team coach, physician, or other relevant authority.

COLLEGE POLICY

1. Attendance: Each student is required to be present at all class lectures and labs. If an unforeseen absence does occur, the student is responsible to get the notes and assignments from another student. If a student has more than 3 absences from class, they may be dropped from the class roster.

Students eligible are excused for "Senior Day"

This 4-credit course will meet for 100 minutes per session twice a week throughout the semester. A minimum of 2-3 hours of student preparation time outside of class is expected for each credit hour. Thus, please be prepared to devote 12-16 hours per week to this course.

2. Instructor Policy: Students not regularly attending class or not turning in assignments will be given a grade of "**F**" at the end of semester if that student has not dropped the class or been dropped by the instructor.

3. In case of an emergency or extenuating circumstances, such as illness, family crisis, contact me or have someone on your behalf contact me immediately; emergencies will be handled on a case-by-case basis. Email is best method for contacting me.

HONOR CODE

In this course the policies and procedures concerning the Rockford University Academic Honor Code including definitions of cheating and plagiarism as they appear on the appropriate pages of the current Rockford University Handbook will be Applicable.

PLAGIARISM POLICY

1. Plagiarism: To plagiarize is to present someone else's ideas or work as your own. Credit (citation) should be given to the source in the following instances: (1) when you directly quote someone else; (2) when you use someone else's ideas or opinions (unless they are common knowledge); (3) when you use someone else's examples; (4) when you cite statistics or other facts compiled by someone else; (5) when you present evidence or testimony taken from someone else's argument (Berke, Jacqueline. Twenty Questions for the Writer. 4th Ed. New York: Harcourt, Brace, Jovanovich, 1985).

If a student plagiarizes, that student will receive an **"F"** for the assignment. A second occurrence of plagiarism will result in expulsion from the course.

2. Copy: Copying parts or whole of assignments, quizzes and exams is just as serious as any other type of plagiarism. Any indication of copying, cheating and/or plagiarism on an exam/assignment/project will be an automatic 0 (zero) for the exam/assignment/project for all students involved.

Date Prepared: 01/14/2020

ADA STATEMENT

Students with Disabilities: If you believe you are eligible to receive any type of academic accommodation, through such federal laws as the ADA, please contact the Lang Center for Health, Wellness, Counseling and Disabilities Services, 815-226-4083. The Lang staff manages disability services for Rockford University.

ACADEMIC CONCERN WITH THIS COURSE

A student who questions the justice of a final grade must first seek an explanation from the course instructor. If dissatisfied with the explanation offered, the student may appeal the grade. Additional information regarding grade appeals can be found in the Academic Catalog.

DISCLAIMER

- Due dates, assignments, etc. are subject to change as directed by your instructor during the course of the semester.
- If you have questions about Computer Science, computer careers, etc. please email Dr. Donghwoon Kwon at dkwon@rockford.edu

COURSE OUTLINE / CALENDAR

Week	Lectures	Topics
1 (1/21 – 1/26)	Lecture 1	Course introduction and syllabus discussion Introduction to DB
2 (1/27 – 2/2)	Lecture 2	How to use MySQL Workbench
	Lecture 3	ER Modeling and Relationship
	Assignment #1: Create an ER diagram Due date: By 11:59PM, 2/9/2020	
3 (2/3 – 2/9)	Lecture 4	How to retrieve data from a single table
4 (2/10 – 2/16)	Lecture 4	How to retrieve data from a single table (Cont')
	Lecture 5	How to retrieve data from two or more tables
	Assignment #2: Retrieve data from a single table Due date: By 11:59PM, 2/16/2020	
5 (2/17 – 2/23)	Lecture 5	How to retrieve data from two or more tables (Cont')
	Assignment #3: Retrieve data from two or more tables Due date: By 11:59PM, 3/1/2020	
6 (2/24 – 3/1)	Lecture 6	How to insert, update, and delete data
	Assignment #4: Insert, update, and delete data Due date: By 11:59PM, 3/8/2020	
7 & 8 (3/2 – 3/15)	-	***Midterm Review, Midterm, and Spring Break***
9 (3/16 – 3/22)	Lecture 7	How to code summary queries
	Assignment #5: Summary queries Due date: By 11:59PM, 3/29/2020	

The *syllabus is subject to change.*

10 (3/23 – 3/29)	Lecture 8	How to code subqueries
11 (3/30 – 4/5)	Lecture 8	How to code subqueries (Cont')
	Assignment #6: Subqueries Due date: By 11:59PM, 04/12/2020	
12 (4/6 – 4/12)	Lecture 9	DB normalization
	Assignment #7: DB normalization Due date: By 11:59PM, 04/19/2020	
13 (4/13 – 4/19)	Lecture 10	PHP and MySQL
	Assignment #8: PHP coding for MySQL Due date: 11:59PM, 4/26/2020	
14 (4/20 – 4/26)	Lecture 11	Term Project
15 (4/27 – 5/2)	Lecture 12	Term Project (Cont')
	-	Review session for the final exam
17 (5/11 – 5/17)	***Final Exam***	

Date Prepared: January 14, 2020

The *syllabus is subject to change.*