IS623: Database Management
Fall 2017

Course Information:
- Instructor: Dr. Cong Pu (Ph.D., Assistant Professor)
- Office: Weisberg Applied Engineering Complex (WAEC) 3109
- Phone: (304) 696-6204
- Email: puc@marshall.edu
- Course meetings: Wed, 4:00 p.m. – 6:20 p.m., WAEC 1201/1203
- Tentative office hours: Mon, 11:00 a.m. – 12:00 p.m., 1:00 p.m. – 4:00 p.m.
  Tue, 11:00 a.m. – 12:00 p.m., 1:00 p.m. – 2:00 p.m.
  Wed, 11:00 a.m. – 12:00 p.m., 1:00 p.m. – 4:00 p.m.
  Or by appointment.
- Course web page: (MUOnline) https://marshall-bb.blackboard.com. It is important to visit MUOnline regularly for up-to-date course information.

Course Description: From Catalog
- Review of information structures and of relationships among data elements and objects. Relational database theory; design and organization of databases, retrieval structures, and query mechanisms.

Course Objectives:
- To help students understand data modeling concepts including relational model for storage and retrieval of information, data query languages such as SQL, and current database technologies.

Course Student Learning Outcomes: The table below shows the following relationships: How each student learning outcomes will be practiced and accessed in the course.

Course Student Learning Outcomes	How students will practice each outcome in this course	How student achievement of each outcome will be assessed in this course
Understand the fundamental principles of the relational data model	• Lecture • Examples • In-class exercise	• Assignment • Quiz • Project • Exam
Formulate an Entity-Relationship (ER) diagram as conceptual design of database requirements	• Lecture • Examples • In-class exercise	• Assignment • Quiz • Project • Exam
Map ER diagrams to relational schemas	• Lecture • Examples • In-class exercise	• Assignment • Quiz • Project • Exam
Formulate a correct relational algebra expression to answer a query using a query language such as SQL that	• Lecture • Examples • In-class exercise	• Assignment • Quiz • Project

involves select-project-join, negation, union, intersection, minimum/ maximum, and a limited form of counting		• Exam
Apply database theory to practice by creating a database application using a commercial database product	• Lecture • Examples • In-class exercise	• Assignment • Quiz • Project • Exam
Understand the current database technologies such as object-oriented databases, or XML	• Lecture • Examples • In-class exercise	• Assignment • Quiz • Project • Exam

Required Textbooks, Additional Reading, and Other Materials:
- A list of reference books will be used. For more information, please refer to the following resources:
  - Thomas Connolly, and Carolyn Begg. Database Systems: A Practical Approach to Design, Implementation, and Management. Pearson. 6 Edition. ISBN-10: 0132943263. ISBN-13: 978-0132943260.
  - Jeffrey D. Ullman, and Jennifer Widom. A First Course in Database Systems. Pearson. 3 Edition. ISBN-10: 013600637X. ISBN-13: 978-0136006374.
  - Paul DuBois. MySQL. Addison-Wesley Professional. 5 Edition. ISBN-10: 0321833872. ISBN-13: 978-0321833877.
- Important concepts/materials will be included in the lecture notes from various sources, and posted on MUOnline.

Course Requirements and Grading Policy:
- Midterm Exam: 20%, **Oct 25 (Wednesday)**, WAEC 1201/1203
- Final Exam: 20%, **Dec 13 (Wednesday)**, WAEC 1201/1203
  - Closed book and closed notes. You are required to bring your student ID for the exams.
  - There will be **NO** make-up for missing exam. Only university excused absences with appropriate documentation will be accepted for make-up exam. The make-up exam must be taken within two days after the scheduled exam.
  - If you want to take a conflict exam, you must talk to instructor and provide a valid document at least two weeks before the scheduled exam. The conflict exam must be taken within two days after the scheduled exam.
- Review Quiz: 15%
  - Review quiz will not be announced in advance, so attendance is highly required.
  - There will be **NO** make-up for missing review quiz. Only university excused absences with appropriate documentation will be accepted for make-up review quiz. The make-up review quiz must be taken within two days after the scheduled quiz.
- Assignments: 20%
  - Assignment should be **PRINTED** and **SUBMITTED** at the beginning of class on due date. **NO** late submission will be accepted.
  - Assignment will be graded based on the posted assignment grading guideline.

- Team Project: 15%
    - Each team can have a maximum of two members. If you prefer to work independently, you need to inform the instructor.
    - Instructor expect and encourage equal contribution and participation to team project. However, all the contribution related issues will be solved by team members only, without instructor involvement.
    - Project (source code and documentation) should be submitted on Blackboard before the due date. **NO** late submission will be accepted.
    - Project will be graded based on the posted project grading guideline.
- Project Presentation: 10%
    - All team members must be present during the presentation.
    - Project presentation will be graded based on the posted presentation grading guideline.
- Plagiarism:
    - Plagiarism or cheating will not be tolerated, and will result in immediate dismissal (F grade).
- Grade Scale:
    - A (100 - 90), B (89 - 80), C (79 - 70), D (69 - 60), and F (59 - 0)

Attendance and Classroom Policy:
- Students are expected to attend punctually all class meetings, from the beginning of the semester until the end of the semester. If a student misses a class without university excused absence, the student should not expect individualized instruction what was missed. This will be effective from the beginning of semester.
- Students are expected to assist in maintaining a classroom environment that is conducive to learning. In order to assure that all students have the opportunity to gain from time spent in class, unless otherwise approved by the instructor, students are prohibited from engaging in any other form of distraction. Inappropriate behavior in the classroom shall result, minimally, in a request to leave class.
- Inappropriate behaviors include but not limited to:
    - Late for class
    - Sleeping during class
    - Leaving without proper excuse
    - Web surfing, chatting, or gaming on electric devices

University Policy and Ethical Conduct:
- By enrolling this course, you agree to the University Policy and Ethical Conduct listed below. Please read the full text of each policy be going to www.marshall.edu/academic-affairs and clicking on "Marshall University Policies". Or, you can access the policies directly by going to http://www.marshall.edu/academic-affairs/policies/ Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment.

Policy for Students with Disabilities:

- Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304-696-2271, to provide documentation of their disability. Following this, the DSS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, please visit http://www.marshall.edu/disabled or contact Disabled Student Services Office at Prichard Hall 117, phone 304-696-2271.

Course Schedule and Due Dates: Topics and/or dates may be changed during the semester at the instructor's discretion because of scheduling issues, developments in the discipline, or other contingencies.

- Aug 23: Welcome & Course Introduction & Introduction to Database

- Aug 30: Database Environment

- Sep 06: Relational Model

- Sep 13: Relational Algebra

- Sep 20: Database System Design Lifecycle

- Sep 27: Conceptual Database Design

- Oct 04: Entity Relationship Modeling & Information Modeling

- Oct 11: Logical Database Design

- Oct 18: Normalization & Advanced Normalization

- **Oct 25: Midterm Exam**

- Nov 01: SQL

- Nov 08: Physical Database Design

- Nov 15: Constraints & Triggers; View; Index; Transactions; Database Recovery

- **Nov 22: Thanksgiving Break – University Closed**

- Nov 29: Object Oriented Data Modeling & Other Topic; Final Exam Review

- Dec 06: Project Presentation

- **Dec 13: Final Exam, 4:00 pm – 6:00 pm, WAEC 1201/1203**