

COURSE SYLLABUS

COSC 3337

Information Systems Design and Management

Dr. Bing Zhou

3 Credit Hours

Spring Semester 2018

Section 01 – AB1-204, 9:30 – 10:50 AM, TR

Office: AB1-212B

Office Hours: TR 2:00-5:00pm

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Catalog Description: This is a course in the design and implementation of large-scale file and persistent object-based information systems.

Prerequisite: COSC 2347 or equivalent.

Methodology: Lecture with outside laboratory assignments. The examinations will cover the material in the lectures, and will require that the student understand, apply, and extend that knowledge.

IDEA objectives: Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)

Objectives: Among other things, this course covers file structures, an important topic in Computer Science. A computer system needs to organize files and directory structures, save large files on disk, and be able to efficiently access records in a file. This course is a required course in the Computer Information Systems curriculum because any computer system has to address the slow speed of disk access compared to memory access. File systems and structures alleviate this problem by organizing the data on disk in such a way that the required data is available with minimum number of accesses. We will consider Sequential Files, Seek Access, CD-ROM, Record Structure, Storage Fragmentation, Binary Search, Indexing, Sorting, B Trees, B+ Trees, and Hashing. The objective of the course is to teach the fundamental concepts of file structure and organization, file operations, record structure, Indexing, and hashing.

The topics to be covered in this course include:

- Introduction to the Design and Specification of File Structure
- Fundamental File Processing Operations
- Secondary Storage and System Software
- Fundamental File Structure Concepts
- Managing Files of Records
- Organizing Files for Performance
- Indexing
- Sequential Processing and the Sorting of Large Files
- Multilevel Indexing and B-Trees
- Indexed Sequential File Access and Prefix B+ Trees
- Hashing

Required Textbook and Supplies:

- Instructor supplied notes

Grading:

There will be three major exams during the semester. Each will count as 20% of the grade. For students who prefer hands-on project, the 3rd exam can be replaced by an assigned project. There are five assignments. Each will count as 6% of the grade. Class participation count as 10% of the grade.

The following grade scale is used:

$$90 \leq A \leq 100$$

$$80 \leq B < 90$$

$$70 \leq C < 80$$

$$60 \leq D < 70$$

$$0 \leq F < 60$$

Attendance Policy: In accordance with University Policy

(<http://www.shsu.edu/students/guide/polpro/attendance.html>), regular attendance is required and your attendance will be seriously monitored. So, don't forget to give your signature on the roster. Students are expected to arrive to the classroom on time, otherwise no full attendance credit for the day will be given. You are responsible for all material covered in classes, regardless of whether you attended or not. It is your responsibility to obtain class materials and class schedule information from fellow classmates if you miss a class.

Students are also expected to pay attention during lectures, to be respectful listening when the instructor or your peers are speaking, and to be fully engaged in your learning without texting, checking your phone or email, or participating in other digital distractions. If you are distracting others in your lack of participation, you will hear from instructor via email or in a short face-to-face conference before, during or after class, and participation points will be taken away throughout the semester.

Academic Dishonesty: All work must be your own or with sources and assistance clearly documented (even group assignments should include who was in your group). See Student Guidelines, Dean of Students Policies, Code of Student Conduct and Discipline (<http://www.shsu.edu/students/guide/dean/codeofconduct.html>) for a description of academic dishonesty and the appeals process. Unauthorized collusion may earn students involved a zero for the work. Repeated or serious cases of academic dishonesty will result in a grade of F and possibly further disciplinary action. Protect your work from copying and document any code or examples you obtain from books, the Internet, tutors, or friends.

Classroom Rules of Conduct: In compliance with the [University Code of Conduct](#), students will refrain from behavior in the classroom that intentionally or unintentionally disrupts the learning process and, thus, impedes the mission of the university. Students should turn off or mute their cellular phones and/or pagers before class begins. Students are prohibited from using tobacco products, making offensive remarks, using inappropriate language, reading newspapers, socializing at inappropriate times, wearing inappropriate clothing, or engaging in any other form of distraction. Students will be warned, then directed to leave the class and/or report to the Dean of Students for disciplinary action in accordance with university policy.

Visitors in the Classroom: Occasional visiting of classes by responsible persons is allowed with prior arrangement with the instructor, as long as it does not interfere with the registered members of the class or the educational process.

Students with Disabilities Policy: It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program

of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see:

<http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>

Religious Holidays: University policy states that a student who is absent from class for the observance of a religious holy day may take an examination or complete an assignment scheduled for that day within a reasonable time after the absence if the professor is informed, in advance. Whenever possible, the student should make arrangements with the instructor at least one week in advance to make up work (see attendance policy).