CSIS 1180-001
Microcomputer Applications
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MWF 9:55-11:10
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Course Content: This course is a survey of the history of computers, hardware components, operating systems, programming languages, program development environment, major microcomputer application packages, data communication, networking, and the social impacts of computers. Major application software includes hands-on experience on word processor, spreadsheet, database, presentation and communication programs.

Prerequisites: Not open to CSIS Majors after they have completed a CSIS Course.

Class Format: Lecture/Lab

Papers/Projects: Projects in Word/Power Point/Excel and Access

Evaluation: Tests on text, lecture content, lab content, and class participation.
Course Content: An introduction to the fundamentals of software
development, including logic, control structures, subprograms, classes,
objects, documentation techniques, testing, and debugging. Assignments
give hands-on experience writing, debugging, and running programs using an
integrated development environment. This course is a serious introduction
to computer science and preparation for more advanced courses in computing.

Prerequisite: MATH 2225 (preferred) or MATH 2215 (either may be taken
concurrently.)

Attendance: Required

Class Format: Lecture, weekly hands-on lab.

Readings: Text

Papers/Projects: A number of programs to be written by the individual student.

Evaluation: Attendance, performance on programs, coupled with traditional exams and
quizzes.
Course Content: This course continues the development of problem solving and programming techniques. Emphasis is placed on data abstraction and implementation techniques such as recursion and dynamic data structures; and more advanced object oriented design concepts such as inheritance, exception handling, and GUI. Assignments involve writing programs using these techniques in an integrated development environment.

Prerequisites: CSIS 2101 and either MATH 2225 or MATH 2215

Attendance: Required

Class Format: Lecture, weekly hands-on lab

Readings: Text

Evaluation: A number of programs to be written by the individual student, traditional exams and quizzes, class participation, performance on lab exercises.
Objectives: To learn Systems Analysis and Design skills that include concepts and principles, tools, and techniques.

Course Content: A study of the system development and design process. Stresses conceptual skills, as well as interpersonal and organizational aspects of systems work.

Prerequisites: CSIS 2101

Attendance: Expected.

Class Format: Lecture, lab work with Visible Analyst, student presentations, class activities.

Laboratory/Field Experience: 9 laboratory experiences


Papers/Projects: Students will analyze and design their own system and will present it in written and oral form.

Evaluation: Grades are based on tests, group work, homework, and project.
Objectives: 1. To introduce students to the concepts and terminologies in modern telecommunications. 2. To enhance the students' abilities in keeping current with the telecommunications news and trends. 3. To provide an opportunity for the students to make presentations of their work and research.

Course Content: A foundation, both theoretical and practical, for data communications, networking, and the Internet. The students study the design, development, and management of Information Technology systems. Topics include voice and data communications, small and large-scale network configurations, and current trends in telecommunications.

Prerequisites: CSIS 1206 NOT OPEN TO FRESHMEN.

Attendance: Required and will be a factor in evaluation.

Class Format: Lecture, demonstration, and students' presentation of their work.

Laboratory/Field Experience: Students will make presentations of their work either in the classroom, or in the laboratory.

Readings: Weekly reading assignments from the textbook and other reference material.

Papers/Projects: Projects will be assigned to enhance students' understanding of the difference concepts.

Evaluation: Students will be graded based on tests, quizzes, projects, and presentations.
Objectives: This course will review and build upon the major concepts introduced in MATH 2225 (Discrete Mathematics) and examine additional mathematical topics needed for the study of computer and information science. An understanding of these mathematical foundations is essential for those students wishing to pursue graduate study in computer science or software engineering. A principal goal is the development of the ability to think and write clearly and mathematically about computer science problems and their solutions. Computer-based exercises using ISETL (Interactive SET Language) will provide students with additional experience with logic, induction, and other methods of mathematical proof, and algorithms. Students will also learn to formulate conjectures and investigate possible answers by experimenting with ISETL.

Prerequisites: MATH 2225 with a grade of C or better and POI

Attendance: Required.

Topics Covered: Review of logic, sets, relations, recursion, and induction. Boolean algebras, graphs, and trees. Applications studied may include the design, analysis, and verification of algorithms; formal specification of software systems; semantics of programming languages; automata; circuit design; parallel algorithms and architectures; and database systems.


Evaluation: Class Attendance & Participation 10%
Homework 20%
Quizzes 5%
Exam #1 20%
Exam #2 20%
Exam #3 25%
Objectives: This course is designed to provide: 1. An understanding of the relational database management model; 2. A working knowledge of relational database design techniques; 3. A working knowledge of a relational database management system and a relational query language; 4. Experience preparing technical documentation; 5. Experience presenting technical material; 6. Opportunities to develop learning relationships with class members.

Course Content: About 2/3 of the course will be dedicated to the study of theory and design techniques which apply to building a relational database and applications, regardless of the commercial product used. The other third will be devoted to learning to use Access to provide a vehicle for building concrete examples to illustrate theory and to practice design techniques.

Prerequisites: CSIS 2101, CSIS 2210, Math 2225 or permission of instructor card.

Attendance: Attendance and positive participation can affect your grade.

Class Format: Lectures, demonstration, laboratory, group activities.

Laboratory/Field Experience: 15-20 laboratory experiences, additional lab time outside of class is required.


Papers/Projects: Major database project and oral presentation.

Evaluation: Grade is based upon tests, group work, homework, oral presentation, project, and class participation.
1. Objectives: The objective of this course is to introduce the design concepts used in computer systems. This course is organized and presented in an orderly transition from the fundamentals of digital logic design to concepts in assembly language based systems programming.

2. Course Content: It covers combinational circuit design, sequential circuit design, addressing modes, instruction formats and assembly language. Turbo Assembler will be used for programming.

3. Prerequisites: CSIS 2102

4. Attendance: required

5. Class Format: The learning process of this course consists of lectures, reading assignments, problem solving sessions, hands-on laboratories, projects and tests.

6. Laboratory/Field Experience: Digital circuit design, Assembly language programming lab.

   Computer Organization Work Book, Ajantha Herath

8. Papers/Projects: As appropriate.

9. Evaluation: Final grades will be based on your performance measured from the following assignments: Projects 30%, Class participation, quizzes and homework 20%, Tests 50%. Students should perform very well in areas to receive an A in this class. In general, an A student has complete understanding, a B student is strong in many areas, a C student is weak in some concepts, and a D student is weak in many areas. Students are expected to attend all class sessions. Examinations/quizzes are designed to test (1) their mastery of terms and concepts, and (2) their ability to apply those terms and concepts to problems posed. Short answer, multiple choice, and fill in the blank questions test the former, essay questions the latter. Two to three in-class exams will be given, along with a final.
Objectives: Well-designed user interfaces can significantly improve both user performance and user acceptance. Regardless of your role in systems development, applying usability principles will be critical to your ultimate success.

Course Content: An up-to-date discussion of the strengths and limitations of how users process information. Also, a review of the major user interface design issues in sufficient detail for practitioners to make informed decisions. Finally, the course deals with usability concerns that occur throughout the entire development process.

Prerequisites: CSIS 2101, CSIS 2210

Attendance: Expected

Class Format: Lectures, student presentations, class activities, project.


Paper/Projects: Students will design and build a prototype of an interface.

Evaluation: Tests 60%
             Project 14%
             Homework Exercises 12%
             Article Presentation 10%
             Discretionary 4%
Course Content: A study on the ethical aspects of using electronic devices in a democratic society, the contract, licensing, and copyright laws in relation to computer hardware and software, and the ownership and protection of knowledge property.

Prerequisites: Open only to seniors.

Attendance: Required.

Class Format: Seminar

Course Content: The course will emphasize the implementation of relational database systems in a multi-user environment. Management topics discussed will include concurrency, security, backup, recovery, and administration of the database. There will be a discussion of data modeling tools, visual tools and database connectivity, and object oriented database management systems.

Prerequisites: CSIS 3222, MATH 2225

Attendance: Attendance for the ENTIRE class period and positive participation can affect your final grade.

Class Format: Lecture, demonstration, and laboratory.

Laboratory/Field Experience: Regular laboratory experiences, additional lab time outside of class is required.


Papers/Projects: Conceptual design and programming problems will be assigned and may require working in groups or individually outside of class time.

Evaluation: Grade is based upon labs, quizzes, projects, tests, other assignments & class participation.
Objectives: 1. To introduce students to the issues related to Operating Systems. 2. To provide a foundation for understanding, and evaluating different Operating Systems. 3. To enhance the students' abilities in studying different operating systems and to be able to present it to an appropriate audience. 4. To implement different operating system concepts by writing appropriate code.

Course Content: An introduction to the fundamental principles and techniques employed in the design of operating systems. Topics include concurrency problems and language features, device management, memory management, scheduling, file and data-base systems, security, networks, and user interfaces.

Prerequisites: CSIS 3103, Required: CSIS 3250 is strongly recommended.

Attendance: Required and will be a factor in evaluation.

Class Format: Lecture, demonstration, and students' presentation of their work.

Laboratory/Field Experience: Students will write programs and make presentations of their work either in the classroom, or in the laboratory.

Readings: Weekly reading assignments from the textbook and other reference material.

Paper/Projects: Projects will be assigned to implement different concepts.

Evaluation: Students will be graded based on tests, quizzes, projects, and presentations.
1. Course objectives: The objective of this course is to introduce recent advances and current issues related to software engineering and security in software systems. The course addresses universal software engineering techniques as well as techniques for development of critical software systems where the cost of system failure is potentially high.

2. Course Content: Topics related to software security including security features and requirements at various levels of programming language, operating system, middleware architecture and database will be included. Having a better understanding and appreciation for theory and practice of computer security engineering is important in today’s world. At the end of the course students will be able to determine the capabilities and limitations of security in information systems.

3. Prerequisites: CSIS 3103 Data Structures and Permission of Instructor.
   Co-requisite: CSIS 4985(Software & Security Engineering Internship I.)

4. Attendance: Required

5. Class Format: The learning process consists of reading assignments, lectures, team project work, homework assignments, student presentations.

6. Laboratory/Field Experience: None


8. Papers/Projects: As appropriate

9. Evaluation: Students should perform very well in areas to receive an A in this class. In general, an A student has complete understanding, a B student is strong in many areas, a C student is weak in some concepts, and a D student is weak in many areas. Students are expected to attend all class sessions. While roll will not be taken at each class, a portion of the grade is based on the student participation in classroom discussions. Examinations/quizzes are designed to test (1) their mastery of terms and concepts, and (2) their ability to apply those terms and concepts to problems posed. Short answer, multiple choice, and fill in the blank questions test the former, essay questions the latter. Two to three in-class exams will be given, along with a final. Final grades will be based on your performance measured from the following assignments: Projects 30%, Class participation, quizzes and homework 20%, Tests 50%.