

DEPARTMENT OF COMPUTER SCIENCE

COLLEGE OF ARTS AND SCIENCES

Faculty

G. Jan Wilms (1992). Professor of Computer Science and Department Chair. B.A., Katholieke Universiteit Leuven, Belgium; M.A. (English), University of Mississippi; M.S. (Computer Science), University of Mississippi; Ph.D. (Computer Science), Mississippi State University.

Stephanie Edge (1996). Associate Professor of Computer Science. A.S., Middle Georgia College; B.S., West Georgia College; M.S., Georgia State University; M.Div., Southern Baptist Theological Seminary.

James Kirk (2001). Associate Professor of Computer Science. B.M., Union University; M.M. and M.A., Indiana University; Ph.D., University of Louisville.

Haifei Li (2004). Assistant Professor of Computer Science. B.E., Xi'an Jiaotong University; M.S. and Ph.D., University of Florida.

Student Awards

A **Departmental Award** is given to the senior who places first in the Major Field Test for Computer Science as partial fulfillment of 498.

First Year Programming Award is awarded to a computer science student by the Department of Computer Science. A student is selected for excellence and expertise in first year programming courses.

Curriculum

Course Offerings in Computer Science (CSC)

() Hours Credit; F–Fall, W–Winter; S–Spring; Su–Summer

105. Survey of Microcomputing Applications (3) F, S
An introduction, for the non major/minor, to computers and their applications. Includes computer and information literacy, but the main emphasis is on competency with software through hands-on practice. Cannot be taken for credit after 115.*

106. Algorithm Development (1) W
How to analyze a problem and design a solution with a specific and explicit sequence of steps that must be performed. Emphasis is on logical thinking and debuggin, not on the syntax of any particular programming language. This course is intended for students who need CSC 115 but have already completed CSC 105. It cannot be earned for credit after earning credit in CSC 115.

115. Computer Science: Introduction & Overview (3) F, S
Introduction exposing majors/minors to the breadth and interrelationships of courses in the field and empowering others for a continuous exploration of today's technical society. A language-independent overview of hardware and software with emphasis on problem solving and algorithm development. Cannot be taken for credit after 105 without departmental approval.*

*Either 105 or 115 apply to the B.S. specific core, but not both.

125. Computer Science I: Programming in Java (4) S
Prerequisite: CSC 115.
Basic concepts of problem solving, algorithm design and analysis, abstract data types, and program structures. GUI development will be introduced and the object-oriented programming paradigm will be emphasized. Students will design, implement, debug, test, and document programs for various applications.

160. Digital Systems (3) F
Corequisites: CSC 115 and MAT 205.
Binary codes, Boolean algebra, combinational logic design, flip-flops, counters, synchronous sequential logic, programable logic devices, MSI logic devices, adder circuits.

170. Computer Architecture (3) S
Prerequisite: CSC 160.
Introduction to the architecture of stored-program digital computer systems including processor and external devise structures and operations, machine operations and instructions, and assembly language concepts and programming.

205. Computer Science II: Algorithms & Data Structures (3) F

Prerequisites: CSC 125, MAT 205.

Pre-or Corequisite: MAT 212.

A study of the complexity of algorithms and advanced data structures, including trees and graphs. Tools for analyzing the efficiency and design of algorithms, including recurrence, divide-and-conqu-

360. Web Building & Site Management (3) F

Prerequisite: CSC 115.

Fundamentals of web site development and management, graphical web-building tools, multi-level site planning and construction, navigation schemes, client- and server-side scripting, basic interactivity, information organization, and the delivery of basic multimedia content.

365. Data Communications and Networking (3) S

Prerequisite: CSC 115 and Junior standing.

Introduction to hardware and software components of computer data communications and networking. Emphasis is on practical, hands-on set-up and administration of a LAN, peer-to-peer networking, and the TCP/IP protocol. Topics include routing, shared file and application access, remote printing, and security. Cannot be taken for credit after CSC 331.

411. Systems Analysis (3) As Needed

Prerequisite: CSC 321.

Process of designing computer-based systems for business applications, tools and techniques of systems development and management; advantages and disadvantages of conversion from existing to new systems will be discussed.

425. Operating Systems (3) F

Prerequisites: CSC 220, 255 and 365. Recommended prerequisite: CSC 170, 220.

Systems resource management: brief historical overview and case studies; discussion of multi-tasking and related concepts of scheduling, interprocess communication, and mutual exclusion/deadlock; overview of file management and memory management. Theory is augmented by detailed study of implementation of an existing operating system.

455. Programming Languages (3) S

Prerequisite: CSC 255.

Issues in programming language design, specification, and implementation: overview and comparison of major contemporary languages; analysis of translation process with

focus on context-free grammars; and investigation of data representation, binding, sequence control, logic and object oriented paradigms. Theory is augmented by implementation of a tokenizer and parser for a simple language.

465. Formal Language (3) F—As Needed

Prerequisites: CSC 255 and MAT 315. Recommended prerequisite: CSC 455.

Theoretical foundations of computer science including formal languages and automata, parsing of context-free languages, Turing machines, computability, and complexity.

485. Internship in Computer Science (3) As Needed

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