

Computer Science Catalog Changes

1. Courses to be added

CSE 563, Access Control and System Security, 3 cr, 3 cl hrs

Prerequisites: Graduate standing or consent of instructor

Topics include theoretical foundations for access control, formal access control models, access control mechanisms, tools and techniques, information flow policy, trust management, security architectures, and current issues of advanced research in access control. In addition, the protection mechanisms of general-purpose operating systems, software systems, and web applications are discussed.

CSE 570, Privacy in mobile environments, 3 cr, 3 cl hrs

Prerequisite: Graduate standing or consent of the instructor

The notion of privacy; privacy threat model; Anonymity through k-anonymity, l-diversity, t-closeness, etc. Approaches to protect the location, identity, and query history of mobile users. Recent developments.

CSE 572, Advanced Data Management, 3 cr, 3 cl hrs

Prerequisite: Graduate standing or consent of the instructor

Semi-structured, unstructured, and graph data; Large data versus BigData; Relational versus NoSQL and centralized versus distributed databases; Query processing and the MapReduce model; Storage, Recovery, Concurrency, Consistency, Availability, and Scalability.

2. Courses to be removed

CSE 569, Embedded Systems Design, 3 cr, 3 cl hrs

Prerequisite: consent of instructor

Hardware/software systems and codesign. Embedded processor architecture and programming. Models of computation for embedded systems. Behavioral design. OS primitives for concurrency, timeouts, scheduling, communication and synchronization. Architecture selection. Simulation, synthesis, and verification. Hardware/software implementation. Performance analysis and optimization. Application-level embedded system design concepts such as basic signal processing and feedback control. Design methodologies and tools. Design examples and case studies.

CSE 570, Real-Time Systems, 3 cr, 3 cl hrs

Prerequisite: consent of instructor

Classification of real-time systems. Fundamental theorems and corollaries of deadline and fixed priority real-time scheduling techniques. Schedulability analysis. Scheduling techniques to guarantee an array of timing requirements. Implementation of a set of tasks with periodic and aperiodic timing requirements. Execution time estimation of a piece of code. Modification of scheduling algorithms in a real-time kernel. Performance evaluation of an operating system for real-time applications.

3. Courses to be revised

Change from

CSE 528, Formal Methods in Software Development, 3 cr, 3 cl hrs

Prerequisites: CSE 342; CSE 325 or 328 or 423 with a grade of C or higher or equivalent experience

Use of mathematics, logic, and computer science theory in software development. Formal specifications; systematic development of programs from specifications. Correctness proofs and other analysis techniques.

CSE 531, Advanced Computer Architecture, 3 cr, 3 cl hrs

Prerequisite: CSE 331 with a grade of C or higher

Advanced topics in computer architecture.

CSE 585, Graduate Seminar, 3 cr

to

CSE 528, Formal Methods in Software Development, 3 cr, 3 cl hrs

Prerequisites: CSE 326, 342, and 344; ~~CSE 325 or 328 or 423~~ with a grade of C or higher or ~~equivalent experience~~ consent of instructor

Use of mathematics, logic, and computer science theory in software development. Formal specifications; systematic development of programs from specifications. Correctness proofs and other analysis techniques.

CSE 531, Advanced Computer Architecture, 3 cr, 3 cl hrs

Prerequisite: CSE 331 with a grade of C or higher, or consent of the instructor

~~Advanced topics in computer architecture.~~

~~This course covers advanced topics in computer architecture which may include superscalar and superpipelined architectures, memory hierarchies, multicore systems, multiprocessor systems, vector processors, interconnection networks.~~

CSE 585, Graduate Seminar, 3 cr, 3 cl hrs

Prerequisite: CSE Graduate standing, or consent of the instructor

~~An introduction to the methodology and skills required for academic research with emphasis on computer science. Students will learn the skills involved in discussing technical ideas; articulating research problems; critiquing, writing, and defending research proposals; reading, reviewing, and presenting research articles with appropriate visual aids; and exploring ethical issues associated with research. Students are expected to attend all presentations by outside speakers in the CS Speaker Series during the semester. Typically offered each Fall.~~