

CS 4626: Computer and Network Security

3 Credit Hours

Prerequisite: CS 3626 and CS 4622

This course is a comprehensive study of the security principles and practices for computer systems and networks. Topics to be covered include basic security concepts, common network attack techniques and impacts, common security policies, Internet protocol vulnerabilities, basic cryptographic tools and secure protocols. Defense techniques such as authentication, access control, encryption, and network intrusion detection will be discussed. This course will also survey new and emerging network security topics, applications and technologies. Exercises for this course will include network programming in some language and using various tools in understanding and analyzing packet traces and network traffic.

CS 4632: Modeling and Simulation

3 Credit Hours

Prerequisite: CS 3305

This course covers the modeling and simulation of the structure and behavior of real-world systems using object-oriented discrete-event simulation techniques. The course emphasizes the modeling and computer programming perspective of simulation; design and implementation of simulation models. The fundamental concepts of object-oriented simulation are introduced. Model implementation will require programming in an object-oriented simulation language such as OOSimL, or in a general purpose programming language (Java or C++). Students will also be exposed to a commercial integrated simulation software tool: Arena.

CS 4712: User Interface Engineering

3 Credit Hours

Prerequisite: CSE 1322 and CSE 1322L

A comprehensive study of techniques in design and implementation of user interfaces engineering. Topics include the foundation of human-computer interaction and interface related to software lifecycle, building a graphic user interface engineering, interaction devices and technologies, human-computer dialogue, cognitive models, usability, the design and development process, user interface management systems (UIMS), interface style and techniques, user learning, and diversity in interaction styles. Major research and the building of a working graphic user interface are included.