CS 5030 : NETWORKS & CYBERSECURITY

Semester Hours: 3.0  
Contact Hours: 3  
Coordinator: Sankardas Roy  
Text: Computer Networking: A Top-Down Approach  
Author(s): Kuros and Ross  
Year: 2017

SPECIFIC COURSE INFORMATION

Catalog Description:
This course provides an intensive study in the fundamentals of networks/networking and cybersecurity. Cannot be counted towards MS in CS. Approved for distance learning.
Prerequisites: Admission to MS in CS program or permission of instructor.

Course type: Required

SPECIFIC COURSE GOALS

- Justify the need for, and describe the working of, layered protocol suites, such as TCP/IP.
- Motivate the need for and summarize the details of service architectures, such as web services and micro-services
- Evaluate the performance of routing protocols
- Use basic cybersecurity tools
- Explain common privacy and security issues of using various devices
- Deploy counter measures to various privacy and security issues

LIST OF TOPICS COVERED

- Computer Networks (~ 50%)
  - Layered Protocol Architectures
  - TCP/IP
  - Client-Server Applications
  - Transport and Routing
  - Service Architectures
  - Multimedia
  - Wi-Fi and Cell Networks
- Cybersecurity (~ 50%)
- Fundamentals of Cybersecurity
- Ethical issues
- CIA Triad: Confidentiality, Integrity, and Availability
- Security issues in networks and devices
- Security issues in social networks
- Common attack schemes
- Protecting personal devices