

## CpE/NIS 560 Syllabus

### Catalog Data : CpE 560 Introduction to Networked Information Systems

*An overview of the technical and application topics encountered in contemporary networked information systems including the overall architecture of such systems, data network architectures secure transmission of information, data representations including visual representations, information coding/compression for storage and transmission, management of complex heterogeneous networks, and integration of next-generation systems with legacy systems.*

### Text Books:

There is no single textbook which covers the range of topics that will be addressed in this course. The two required textbooks view networked information systems from different perspectives. Comer's book emphasizes technical details whereas Subramanian's book takes a management-level viewpoint.

Douglas E. Comer

*Computer Networks and Internets*

Prentice Hall

ISBN 0131433512

2004

**Note:** There are several editions of this textbook. They contain similar material, but perhaps organized differently.

Mani Subramanian

*Network Management: Principles & Practices*

Addison Wesley

ISBN 0-201-35742-9

2000

**Note:** This textbook is also used for CpE/NIS 565.

**Coordinator:** S. Tewksbury, Prof. of ECE

### Goals:

Networked information systems, viewed as overall end-to-end systems, represent a complex system both in terms of the individual components and in terms of the integration of these components into an overall system capable of operating under a combination of legacy system components and state-of-the-art system components. The various elements of the overall system include the information that is accessible, the representation of this information in a manner that allows efficient transmission and storage, the software environment allowing different end-use systems to access the information, the storage of this information in an organized fashion allowing searches for specific information items, the software and hardware elements used to provide security and assurance, the operating system components allowing connections between the network access points and the application software of the transmitting end, the physical network locally connected to the transmitting and receiving ends of the networked system, the various networks (local, metropolitan, wide area, etc.) that provide pathways between the local networks of the transmitting and receiving ends, software and hardware to monitor the performance and activity throughout the end-to-end system, software environments supporting design and performance modeling/evaluation of network components and the overall end-to-end

network, and various other elements. The goal of this course is to provide the student with a broad understanding of these various elements and their integration into a networked information system. The basic instructional material provided in this course has been designed to cover the major issues, with supplementary reading material allowing a student to delve more deeply into specific topics of personal interest.

### **Grading Policy**

All homeworks and the final assignment count equally towards the final grade. Assignments are expected to be submitted by the deadline specified. Late submissions may be penalized.

**Prerequisites by Topic:** None.

### **Homework Submissions**

All homeworks and the final assignment should be submitted by uploading to the WebCampus site for this course. After uploading a file, check to ensure that it appears (i.e., "attach button was pressed").

**Summary of Topics** The course is organized as a sequence of topics that will be covered. The topic number roughly corresponds to the week number (e.g., Topic 3 given in Week 3)..