Basic Course Information CS 5650

Course Title: Advanced Computer Networks

Units: 3

C/S Classification #: C-2

Component (select one): Lecture

Instructional Mode (select all appropriate choices): Face-to-Face and web-assisted

Grading Basis (select one): Graded only

Repeat Basis (select one): May be taken only once

Cross listed Course (if offered with another department):

Dual-listed Course (if offered as lower/upper division or undergraduate/graduate):

Major course/Service course/GE course (select all appropriate choices): Major course

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I Catalog Description

Issues in network architectures and standards. Network design. Performance evaluation and monitoring. Network management and security. High-speed networking technologies. Wireless networks and mobile computing. System architecture and network programming.

II Required Coursework and Background

Pre-requisite(s): CS 3800 or consent of instructor.

III Expected Outcomes

On successful completion of this course, students will be able to:

1. Perform research in advanced computer networking
2. Write technical reports/communications
3. Give advanced computer networking oral presentations
4. Critically analyze oral presentations from other students

Outcomes of this course will build student capacity in each of the following areas as defined by programmatic objectives for the computer science major.

P-SLO 2. An ability to comprehend and apply the state-of-the-art concepts and design principles in advanced computer architecture.

IV Instructional Materials

Texts may vary with instructor and over time. Examples of possible texts include:

Computer Networks: A Systems Approach, 5th Edition, Peterson and Davie, 2007.

V Minimum Student Material

Course textbooks

VI Minimum College Facilities

Computer, library, Blackboard, classroom with a projection system

VII Course Outline

Topics may vary with instructor and over time. Examples of possible topics might include:

Wireless consumer communications and networking

Smart spaces and personal area networks

Multimedia and entertainment networking and services

Mobile and cloud computing

Peer-to-peer networking and content distribution

Emerging and innovative consumer technologies and applications

Security and content protection

VIII Instructional Methods

Lecture

Problem-solving

Discussion

IX Evaluation of Outcomes

A. Student Assessment

i two written assignments

ii oral presentation

iii class participation

iv midterm

v final

B. Meaningful Writing Assignment

 Students shall produce programs to problems that are assigned as programming projects and explain their reasoning.

Students shall produce essays/technical reports to problems that are assigned as research projects.

C. A Matrix of Course Student Learning Outcomes vs Methods of Assessment

If the course is being evaluated for accreditation purposes, approved department accreditation assessment tools will additionally be utilized.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Course Learning Outcomes | Methods of Assessment | | | |
| Class Participation | Homework Assignments | Exams | Presentations |
| Perform research in advanced computer networking | x | x | x | x |
| Write technical reports/communications | x | x | x |  |
| Give advanced computer networking oral presentations | x |  |  | x |
| Critically analyze oral presentations from other students | x |  |  | x |