

NEWARK COLLEGE OF ENGINEERING

SYLLABUS AND COURSE INFORMATION

Course Name: Networking Applications

Course Number: ECET 416

Course Structure: 2-2-3 (lecture hr/wk – lab hr/wk – course credits)

Course Description: Introduces students to the technology of networking with a particular focus on local area networks (LANs) and the protocols associated with network communication. Comprised two components: concept/theory and hands-on/applications in the laboratory. Topics include: overview of telecommunications systems; networking concepts, protocols and standards; wide area networks, (LANs), the enterprise network, LAN topology, media access control, transport control protocol (TCP), internet protocol (IP), and routing. Students learn to analyze traffic flow on network links and how to write network based software applications.

Prerequisites: ECET 344

Corequisites: None

**Required, Elective,
or Selected Elective:** Elective

Required Materials: **Text:** Name: Computer Networking: A Top-Down Approach
Author: James F. Kurose and Keith W. Ross
Year: 2012
ISBN: 978-0-13-285620-1

Course Outcomes: By the end of the course students are able to:

1. Understand the topology of local and wide area networks.
2. Understand the difference between the main data transport layers and the application layer.
3. Understand the basics of the TCP and IP protocols.
4. Understand the basics IP based routing.
5. Write simple network based applications in a modern programming language.
6. Observe and understand network traffic using a software or hardware network traffic analyzer.

Class Topics:	LANs	WANs
	IP Addressed	The Transport Layer
	The Application Layer	The OSI Model
	TCP	IP
	Sockets	Network Traffic
	Network Communication	

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Student Outcomes: The Course Learning Outcomes support achievement of the following Student Outcomes from the ETAC of ABET Criterion 3 requirements.

Student Outcome a: An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly defined engineering technology activities.

Related Course Outcome: 5

Student Outcome d: An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives.

Related Course Learning Outcomes: 5

Student Outcome f: An ability to identify, analyze, and solve broadly-defined engineering technology problems.

Related Course Learning Outcomes: 5 & 6

Academic Integrity: NJIT has a zero-tolerance policy regarding cheating of any kind and student behavior that is disruptive to a learning environment. Any incidents will be immediately reported to the Dean of Students. Please visit the Dean of Students website at <http://www.njit.edu/doss> for a list of student policies relating to academic integrity and student conduct.

Modification to Course: The Course Outline may be modified at the discretion of the instructor or in the event of extenuating circumstances. Students will be notified in class of any changes to the Course Outline.

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