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ECET 416-102: Networking Applications

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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: CompTIA Server+ Cert. All-in-One Exam Guide
Author: Daniel Lachance
Year: 2016
ISBN: 978-1-25-983803-3

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: Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at:
<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu

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.

Prepared By: Daniel Brateris
Course Coordinator: Daniel Brateris