CSIT 185: NETWORKING I

1. Course Information

Subject
CSIT - Computer Science/ Information Technology

Course Number
185

School
Science, Technology, Engineering, Mathematics

Course Title
Networking I

2. Hours

Semester Hours
3.00000

Lecture
3

Lab
0

Practicum
0

3. Catalog Description

For display in the online catalog
This course will provide students with an introduction to fundamental networking concepts. It will place emphasis on concepts such as: networking applications, data delivery and routing, network architecture, layering, and protocols. This course will address the basic principles of wireless networking and network security. Students will gain a greater understanding of increasingly prevalent network technology in the modern world and will learn concepts behind changing network environments. Whenever applicable, concepts will be explained through the use of hands-on exercises that reinforce lecture material. MS DOS and Programming are highly recommended.

4. Requisites

Prerequisites
None

Corequisites
None

5. Course Type

Course Fee Code
3

Course Type for Perkins Reporting
vocational (approved for Perkins funding)

6. Justification

Describe the need for this course
This course will be required in a new program that is being developed, the AAS in Computer Science/Information Technology. Students will master networking concepts for various certification examinations, which are frequently required to obtain positions in the field such as network administrator, network technician, network installer, help desk technician and IT cable installer.

7. General Education

Will the college submit this course to the statewide General Education Coordinating Committee for approval as a course, which satisfies a general education requirement?

No

If the course does not satisfy a general education requirement, which of the following does it satisfy:

Program-specific requirement

8. Consistency with the Vision and Mission Statements, the Academic Master Plan, and the strategic initiatives of the College

Please describe how this course is consistent with Ocean County College's current Vision Statement, Mission Statement, Academic Master Plan, and the strategic initiatives of the College:

	Add item
1	Offer comprehensive educational programs that develop intentional learners of all ages and ensure the full assessment of student learning in these programs. (Mission Statement)
2	Foster educational innovation through effective teaching-learning strategies, designed to develop and nurture intentional learners who are informed and empowered. (Vision Statement)
3	Employ technology and learning outcomes assessment to ensure student success in an increasingly diverse and complex world. (Vision Statement)
4	Prepare students for entrance into the workforce and/or for successful transfer to other educational institutions. (Academic Master Plan)
5	Seek to empower students through the mastery of intellectual and Practical Skills. (Academic Master Plan)
6	Challenge students to transfer information into knowledge and knowledge into action. (Academic Master Plan)

9. Related Courses at Other Institutions

Comparable Courses at NJ Community Colleges

Institution

Atlantic Cape CC

Course Title

COMPUTER NETWORKING

Course Number

CISM146

Number of Credits

3

Institution

Rowan College at Burlington County

Course Title

NETWORKING FUNDAMENTALS

Course Number

CIS150

Number of Credits

3

Institution

Camden County College

Course Title

INTRODUCTION TO NETWORKING

Course Number
CST102

Number of Credits
3

Institution
Mercer County CC

Course Title
FUNDAMENTALS OF COMPUTER NETWORKS

Course Number
NET104

Number of Credits
3

Transferability of Course

Georgian Court University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
ELECTIVE CREDIT (3)	ELECTIVE	

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
TECH1100 TECHNOLOGY SYSTEMS (3)	GEN ED A minimum grade of 'D' is required to transfer for non-major and 'Free Elective' courses. A minimum grade of 'C' is required for major courses	

Monmouth University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
Computer Science Elective	100 Level CS Elective	

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
Computer Science Elective– 3 CR	General Education Computer Science Elective	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
		Will not transfer

Stockton University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
Computer Science and Info Systems Elective	Computer Science Elective	

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:
CLO1	Explain the concept of Internet and its architecture as well as network layering, protocols, and its communications; create diagrams of layers of networks including the application layer, the transport layer, the network layer and the link layer.

CLO2	Distinguish different types and topologies of wired and wireless networking technology and discuss their applications and limitations and the advantages/disadvantages of each.
CLO3	Assess each network layer protocols' function and application, and explain internet data flow and controls.
CLO4	Assess the function of routers and routing protocols as well as network addressing and routing methodologies.
CLO5	Address various types of network attacks, and analyze security concerns on both wired and wireless networks.
CLO6	Describe the fundamentals of network management and envision the future networking development.

11. Topical Outline

(include as many themes/skills as needed)

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
TO1	Introduction to Internet architecture 1. What is the Internet? 2. Network edge (Access networks and physical media) 3. Network core (Packet and Circuit Switching) 4. Protocol layers and their service models	Reading of textbook Homework Internet research Class discussion Real case analysis	Exam	CLO1, 2, 3, 5, 6
TO2	Network architecture, layering, and protocols 1. Application Layer a. Network applications b. Application layer protocols 2. Transport Layer a. Principles of reliable data transfer b. Types of transport 3. Network Layer a. The Internet Protocol (IP) addressing in the Internet b. Forwarding and routing 4. Link Layer: a. Access networks and links b. LANs	Reading of textbook Homework Internet research Class discussion Project	Exam Project & Presentation	CLO1, 2, 3, 4, 5, 6
TO3	Other aspects of the Internet 1. Wireless and mobile Networks a. Wireless (Cellular) Internet Access b. WiFi: Wireless LANs c. Mobility management principles 2. Security in Computer Networks a. Types of network attack and data security b. Encryption and authentication, firewalls and Intrusion Detection Systems 3. Network Management a. Definition b. Infrastructure for Network Management	Reading of textbook Homework Internet research Class discussion Project	Exam Project & Presentation	CLO1, 2, 4, 5, 6

12. Methods of Instruction

In the structuring of this course, what major methods of instruction will be utilized?

Lecture, homework, case studies, labs, a minimum of three examinations.

13. General Education Goals Addressed by this Course (this section is to fulfill state requirements)

Information

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Technological Competency
Yes

Related Course Learning Outcome
All

Related Outline Component
All

Assessment of General Education Goal (Recommended but not limited to)
Exam & Project presentation

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Independent/Critical Thinking
Yes

Related Course Learning Outcome
All

Related Outline Component
All

Assessment of General Education Goal (Recommended but not limited to)
Exam & Project presentation

14. Needs

Instructional Materials (text etc.):
Appropriate textbook and /or open educational resources will be selected. Contact the department for current adoptions. Class notes, presentations, software and online materials.

Technology Needs:
College Portal and/or College Distance Learning Platform and/or Textbook or Instructor Website.

Human Resource Needs (Presently Employed vs. New Faculty):
One (1) presently employed full-time faculty plus additional Adjunct Professors as needed.

Facility Needs:
Laboratory classrooms equipped with computer workstations, each configured to support networking. Podium computer similarly equipped plus the ability to present audio-video presentations to the class.

15. Grade Determinants

The final grade in the course will be the cumulative grade based on the following letter grades or their numerical equivalents for the course assignments and examinations

A: Excellent

B+: Very Good

B: Good

C+: Above Average

C: Average

D: Below Average

F: Failure

I: Incomplete

R: Audit

For more detailed information on the Ocean County College grading system, please see Policy #5154.

16. Board Approval

History of Board approval dates

Board of Trustees Approval Date: February 23, 2015
Approval of Form: September 2017
Board of Trustees Approval Date: March 26, 2020