RARITAN VALLEY COMMUNITY COLLEGE
ADADEMIC COURSE OUTLINE

CISY 270 – Introduction to Cisco Networking

I. Basic Course Information

A. Course Number and Title: **CISY-270, *Introduction to Cisco Networking***

B. New or Modified Course: **Modified**

C. Date of Proposal or Revision: Semester: **Fall**   Year: **2013**

D. Sponsoring Department: **Computer Science Department**

E. Semester Credit Hours: **3**

F. Weekly Contact Hours: Lecture**: 4 hours**
Laboratory**: 4 hours**

G. Prerequisite: **None**

H. Laboratory Fees: **Yes, at current rate**

I. Department Chair: **Dr. Tom Edmunds,**
tedmunds@raritanval.edu

II. Catalog Description

Prerequisite: None. This course is the first of four 7½ week courses in a program called the *Cisco Networking Academy*, which is a partnership between RVCC and the Cisco Corporation. This first course covers the basics of modern data communication networks including the OSI Model and TCP/IP open protocols. Students will have hands on experience including, but not limited to, Network Operating System Installation and Configuration, Cable construction and Testing, Basic LAN design and implementation in a Laboratory environment.

III. Statement of Course Need

A. In the rapidly developing field of data communications and internetworking, Cisco is the dominant vendor of Networking Equipment. Cisco certification is recognized world-wide as a necessity for a sustained career in Network Design, Implementation, Management and Trouble Shooting.   This course will help students learn the basic concepts of Networks and Open Network Standards and Protocols, enabling them to

progress to the next level on the path towards Certified Cisco Networking Associate (CCENT and CCNA) certification.

B. This course does have a Laboratory component. The Laboratory equipment consists of the latest Cisco Routers and Switches which the students use to demonstrate their ability to construct networks and perform basic router and switch configuration.

C. Most colleges do not accept this course as transferrable. Those that do only accept it as an Elective. However, a student who transfers into a Cisco Academy at another Institution will receive credit for the first course in the CCNA Version 5.0 curriculum at that Institution.

IV. Place of Course in College Curriculum

A. Free Elective
B. This course meets a program requirement for:
1. *Computer Networking Certificate – Cisco Emphasis*
2. *Computer Networking Certificate of Completion – Cisco Emphasis*
C. This course serves as a CIS Elective on the Computer Science Elective List
D. To see course transferability: a) for New Jersey schools, go to the NJ Transfer website, www.njtransfer.org, b) for all other colleges and universities, go to the individual websites

V. Outline of Course Content

Course 1 – Introduction to Cisco Networking [Cisco CCNA1 Semester]

A. Students are introduced to the basics of modern networking. They will examine the most popular versions of LANs and WANs and how they work. Students will learn the fundamentals of:

1. Networks and layered communication

2. The OSI Model

3. Configuring a Network Operating System, routers and switches

4. Network Protocols and their application

5. TCP/IP including IP addressing and subnet masking, and techniques for IPv4 subnetting

6. IPv6 addressing and configuration

7. Network Topologies with emphasis on Ethernet and Ethernet Switching

B. Labs will include the wiring of networking equipment to terminal blocks and patch panels, the testing of cables using Network Testing Devices, the configuration of workstations to run TCP/IP, IP subnetting exercises, and the use of PING and TRACEROUTE for network diagnostics. Some labs will be done using simulation software while others will be performed on actual hardware.

VI. General Education and Course Learning Outcomes

A. General Education Learning Outcomes

At the completion of this course, the student will be able to:

1. Produce accurate, written Lab Reports in a clear and concise manner (GE-NJ 1)

B. Course Learning Outcomes

At the conclusion of the course, students will be able to:

1. Describe the devices and services used to support communications in data networks and the Internet
2. Describe the role of protocol layers in data networks
3. Design, calculate and apply subnet masks and addresses to fulfill given requirements in IPv4 and IPv6 environments
4. Build a simple Ethernet network using physical routers and switches
5. Use Cisco command-line interface (CLI) to perform basic router and switch configurations and network troubleshooting

VII. Modes of Teaching and Learning

A. Traditional lecture with Slide and Video presentations
B. Self-learning through an online version of the curriculum delivered by Cisco
C. Laboratory Exercises on actual hardware (in small groups)
D. Laboratory Exercises using Simulation Software (individually)

VIII. Papers, Examinations, and other Assessment Instruments

A. Exams on each major topic (11 in all). Exams are part of the online tutorial provided by the Cisco Networking Academy Program and therefore are standard across all Academies
B. Laboratory Exercises – Assignments are part of the Academy Program and provide consistency in skill development across all Academies
C. Skills Examination (cable making, punch down block wiring)

D. Final Examination – used to assess the student's mastery of the topics covered in the class. The Final Exam is a product of the Cisco Academy Program

IX.   Grade Determinants

A. Major Topic Exams
B. Final Examination – students must pass the final examination with a 70% or higher in order to proceed to the next 7.5 week course in the series
C. Skills Examination
D. Laboratory Exercises

X.   Texts and Materials

A. Suggested Textbook

Odom, Wendall *Cisco CCNA Routing and Switching 200-120 Official Cert Guide Library* Cisco Press 2013

(Please note: The course outline is intended only as a guide to course content and resources. Do not purchase textbooks based on this outline. The RVCC Bookstore is the sole resource for the most up-to-date information about textbooks.)

XI.   Resources

A. Access to General Purpose Computers with Internet Access
B. Access to Cisco Routers and Switches as specified in the Academy Program
C. Access to the Cisco Networking Academy Lab which can be isolated from the RVCC Network