

River Valley Community College
One College Place
Claremont, NH, 03743

February 2013

FUNDAMENTALS OF COMPUTER NETWORKING

CURRICULUM AND COURSE NUMBER:	CYBS 125R
DEPARTMENT:	Business/Computer Technology
CREDIT HOURS:	3
SEMESTER HOURS:	CLASS 2 LAB 2
PREREQUISITES/COREQUISITES:	None

COURSE DESCRIPTION

Cybersecurity specialists are required to have a solid foundation in computer networking. This course provides a high level examination of computer networking through the introduction of the Open Systems Interconnection (OSI) model, the TCP/IP protocol suite, routing and switching protocols, Wide Area Network services, and network design & implementation. This course is designed to teach students how a network works, and how the network, and its services, impacts the security architecture of an organization.

Course Competencies:

1. Identify the layers of the OSI model, the basic functions of each layer, the protocol data units at those layers and the physical components that operate at the layers.
2. Identify the physical and logical network topologies currently being utilized in the industry.
3. Configure TCP/IP in Windows.
4. Work with IP addressing including sub-netting.
5. Utilize network support software such as management tools and protocol analyzers.
6. Identify router user interfaces and internal components.
7. Describe the router startup process.
8. Implement IP addressing and sub-netting schemes.
9. Implement static routing.
10. Implement dynamic routing.
11. Implement Access Control Lists.
12. Configure network properties through the Windows operating system.
13. Understand the different routing protocols and how they are implemented.
14. Analyze the current status of computer network.
15. Identify the impact of applications on the computer network.
16. Create a computer network design.

Course Outline:

1. Network Addressing
2. Network Services
3. Networking in the Enterprise
4. Exploring the Enterprise Network Infrastructure

5. Switching in an Enterprise Network
6. Routing with a Distance Vector Protocol
7. Routing with a Link-State Protocol
8. Filtering Traffic Using Access Control Lists (ACLs)
9. Characterizing the existing network
10. Identifying Application Impacts on the Network Design
11. Creating the Networking Design

Learning/Instructional Methods:

Lectures	Discussions
<i>PowerPoint</i> Presentations	Term Papers
Lab and Reading Assignments	

Performance Evaluation:

Midterm and Final Exams	Weekly written assignments
Term Paper	Discussion participation
Quizzes	

Suggested Text(s): Please refer to syllabus

Origination date:

Revisions: