

**Network Systems Administration Department**  
**Business/Public Service Division**  
**GREENVILLE TECHNICAL COLLEGE**

**COURSE SYLLABUS**

**Course Number:** IST 202

**Course Title:** Cisco Router Configuration

**Lecture hours per week:** 3.0    **Semester credit hours:** 3.0

**Prerequisite:** IST 201

**Catalog Course Description:** This course is a study of LANs, WANs, OSI models, Ethernet, token ring, fiber distributed data interface, TCP/IP addressing protocol, dynamic routing, and the network administrator's role and function.

**Purpose of the Course:** This course provides the knowledge and concepts required to understand how to design and build networks and configure Cisco routers.

**Required text(s) or other materials:**

1. Routing Protocols and Concepts: CCNA Exploration Companion Guide, bundled with Routing Protocols and Concepts: CCNA Exploration Labs and Study Guide Cisco Press, 2008; ISBN: 0-131-357719
2. NOTE: Students in traditional classes must access Blackboard for course-related information. Students in hybrid and online classes will access their online content through Blackboard.

**COLLEGE-WIDE STUDENT LEARNING OUTCOMES**

1. Communication – Students will demonstrate the ability to use active reading and listening skills and to produce effective written and oral communication for varying audiences.
2. Information Technology and Technological Literacy – Students will demonstrate competency in using computer technology within a field of study.
3. Critical Thinking/Reasoning – Students will demonstrate the ability to apply the scientific method, mathematical processes, and research skills to analyze and solve problems/issues by using reflection and reasoning to justify conclusions.
4. Professional and Personal Responsibility – Students will demonstrate the ability to exhibit conduct, attitudes, and etiquette appropriate to the student's community and chosen career. Students will demonstrate the ability to manage time, to use effective interpersonal skills, and to display responsible behavior.
5. Diversity – Students will demonstrate the ability to recognize diversity and to demonstrate respectful conduct and attitudes toward all. Students will demonstrate the ability to explain how global issues impact life, work, and opportunities.

*Approved March 26, 2009*

## NETWORK SYSTEMS ADMINISTRATION PROGRAM LEVEL STUDENT LEARNING OUTCOMES

Upon successful completion of the Network Systems Administration program, the student will be able to:

1. Set up, maintain, and troubleshoot computer and network hardware.
2. Install, maintain, and troubleshoot operating system and application software.
3. Construct and configure local area networks.
4. Administer and troubleshoot network operating systems.
5. Analyze and implement security measures for information technology.

## IST 202 COURSE OUTCOMES

Upon completion of the course, the student will be able to successfully complete 70% of the following tasks:

1. Install and configure dynamic routing protocols on a Cisco router.
2. Explain the operations of static and dynamic routing.
3. Explain and demonstrate Variable Length Subnetting.
4. Explain packet propagation in a TCP/IP network.

*The outcomes of the IST 202 course are intended to meet the Network Systems Administration program level student learning outcomes numbered 1, 2 and 3.*

## IST 202 – Cisco Router Configuration Tentative Schedule of Topics

### Module 1 – Introduction to Routing and Packet Forwarding

- CLI Configuration and Addressing
- Building the Routing Table
- Path Determination and Switching Functions

### Module 2 – Static Routing

- Routers and the Network
- Static Routes

### Module 3 – Introduction to Dynamic Routing Protocols

- Classifying Dynamic Routing Protocols
- Metrics
- Administrative Distances

### Module 4 – Distance Vector Routing Protocols

- Network Discovery
- Routing Table Maintenance
- Routing Loops

### Module 5 – RIP Version 1

- Basic RIPv1 Configuration
- Verification and Troubleshooting
- Automatic Summarization
- Default Routes

Module 6 – VLSM and CIDR  
Classful and Classless Routing  
VLSM  
CIDR

Module 7 – RIPv2  
Configuring RIPv2  
VLSM and CIDR

Module 8 – The Routing Table  
Routing Table Lookup Process  
Routing Behavior

Module 9 – EIGRP  
Introduction  
Basic EIGRP Configuration  
EIGRP Metric Calculation  
DUAL

Module 10 – Link State Routing Protocols  
Link-State Routing  
Implementing Link-State Routing Protocols

Module 11 – OSPF  
Introduction  
Basic OSPF Configuration  
OSPF Metric

### IST 202– Course Specific Requirements

The Cisco curriculum is available at the web site [cisco.netacad.net](http://cisco.netacad.net). The text is used as an enhancement to the online curriculum. The online curriculum and review quizzes can be accessed with your user name and password. To receive full benefit from the online curriculum, be sure to visit links recommended and review audio portions.

The final exam will consist of an online assessment and a skill based assessment.

### IST 202 – EVALUATION AND GRADING INFORMATION

Grades will be calculated as follows:

A numeric grade will be given for each of the following items:	Unit Tests (Cisco Online)	50 percent
	Class Assignments	10 percent
	Final Examination (Cisco Online)	20 percent
	Skills-based Assessment	20 percent

Final letter grades will be issued as follows:	A	=	90 - 100
	B	=	80 - 89
	C	=	70 - 79
	D	=	60 - 69
	F	=	0 - 59

**INCOMPLETES:** An INCOMPLETE ("I") will only be approved if ALL of the following conditions exist:

- The student must have no more than 3 weeks (15-week term) or 1.5 weeks (8-week/10-week term) remaining to complete the course.
- The student must have a validated, documented reason why he/she cannot complete the course by the prescribed end date (illness, work situation, death, etc.).
- The student must be up to date with all work up to the point of the request for an Incomplete (no untaken tests or unsubmitted labs, homework, etc.), and the student must have a passing grade average (C or higher) for all work submitted.

**READ THIS SYLLABUS CAREFULLY**

You should read this syllabus carefully and ask your instructor about *any* aspects that you do not understand. The syllabus is an agreement between you and your instructor concerning course objectives, course content, grading, and other policies and procedures particular to this course. The above information is specific to the course. Three additional documents are provided as attachments and *are considered a part of this syllabus*:

Attachment 1:

Each instructor will provide a supplement to this syllabus. The supplement will include: a week-by-week plan of instruction based on the section in which you are enrolled; your instructor's name, office hours and/or office location; and your instructor's contact information and recommended best methods to contact your instructor.

Attachment 2:

The Department responsible for developing and teaching has policies and procedures in place to assure quality instruction for all students. These are attached as "Departmental Policies and Procedures."

Attachment 3:

Please note that it is your responsibility to read the current Student Handbook included in Greenville Technical College's Catalog. (See website.) The Student Handbook addresses specific academic and student conduct policies and procedures. Excerpts from the Student Handbook representing the policies and procedures most often referred to in working with students are provided for your convenience as "Attachment 3."

Approved by:

  
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Approved by:

  
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Approved by:

  
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21 June 11  
Date

*This syllabus will remain in effect until revised or reviewed no later than August 2012.*