

Purpose: It is the intention of this Administrative-Master Syllabus to provide a general description of the course, outline the required elements of the course and to lay the foundation for course assessment for the improvement of student learning, as specified by the faculty of Wharton County Junior College, regardless of who teaches the course, the timeframe by which it is instructed, or the instructional method by which the course is delivered. It is not intended to restrict the manner by which an individual faculty member teaches the course but to be an administrative tool to aid in the improvement of instruction.

Course Title - Scaling Networks (CISCO 3)

Course Prefix and Number – ITCC 1478

Department – Computer Science

Division – Technology & Business

Course Type: (check one)

- Academic General Education Course (from ACGM – but not in WCJC Core)
- Academic WCJC Core Course
- WECM course (This course is a Special Topics or Unique Needs Course: Y or N)

Semester Credit Hours #: Lecture Hours #: Lab/Other Hours #: 4:3:3

Equated Pay hours for course – 4.5

Course Catalog Description - This course describes the architecture, components, and operations of routers and switches in a larger and more complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network.

List Lab/ Other Hours
Lab Hours 3
Clinical Hours 0
Practicum Hours 0
Other (list) 0

Prerequisites/Co-requisites –Grade of C or better in ITCC 1476

Prepared by: Donna Schilling

Date: 07-19-2015

Reviewed by Department Head: Donna Schilling

Date: 07-19-2015

Accuracy verified by Division Chair: David Kucera

Date: 8/12/15

Approved by Dean or Vice President of Instruction: Leigh Ann Collins

Date: 3-4-16



I. Topical Outline – Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, clinical or other non-lecture instruction):

- Growing the Network
- LAN Redundancy
- Link Aggregation
- Wireless
- Adjust and Troubleshoot Single-Area OSPF
- Multiarea OSPF
- EIGRP
- Adjust and Troubleshoot EIGRP
- IOS File Management

II. Course Learning Outcomes

Learning Outcomes	Methods of Assessment
<p>Upon successful completion of this course, students will:</p> <ol style="list-style-type: none"> 1. Configure and troubleshoot DHCP and DNS operations for IPv4 and IPv6. Understand and describe the operations and benefits of the Spanning Tree Protocol (STP). 2. Configure and troubleshoot STP operations. 3. Understand and describe the operations and benefits of link aggregation and Cisco VLAN Trunk Protocol (VTP). 4. Configure and troubleshoot VTP, STP, and RSTP. 5. Configure and troubleshoot basic operations of routers in a complex routed network for IPv4 and IPv6: A. Open Shortest Path First (OSPF) protocol (single-area OSPF and multi-area OSPF). B. Enhanced Interior Gateway Routing Protocol (EIGRP). 6. Configure and troubleshoot advanced operations of routers and implement RIP, OSPF, and EIGRP routing protocols for IPv4 and IPv6. 7. Manage Cisco IOS Software licensing and configuration files. 	<p>All outcomes will be assessed by one or more of the following:</p> <p>Individual Projects Tests and Quizzes Lab Assignments Final Exam Skills Exam</p>

III. Required Text(s), Optional Text(s) and/or Materials to be Supplied by Student.

- CCNA Portable Command Guide Third Edition by Empson ISBN-9781587204302 eBook: 9780133381368
- USB Flash Drive
- High-speed Internet Connection

IV. Suggested Course Maximum - 18

V. List any specific spatial or physical requirements beyond a typical classroom required to teach the course.

Computer for each student, Cisco routers, switches, wireless routers, fiber cable tester, Ethernet cable testers

VI. Course Requirements/Grading System – Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course

Course Requirements

Comprehensive Skills Exam	20-25%
Comprehensive Final Exam	20-25%
Labs/Homework	25-30%
Chapter Tests	20-25%
Attendance/Participation	0-15%

Grading System –

100 -90	= A
89 - 80	= B
79 - 70	= C
69 - 60	= D
and below	= F

VII. Curriculum Checklist

- **Academic General Education Course** (from ACGM – but not in WCJC Core)
No additional documentation needed
- **Academic WCJC Core Course**
Attach the Core Curriculum Checklist, including the following:
 - Basic Intellectual Competencies
 - Perspectives
 - Exemplary Educational Objectives
- **WECM Courses**
If needed, revise the Program SCANS Matrix & Competencies Checklist.