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 – Cisco Exploration 4 – Accessing the WAN
Course Prefix and Number – ITCC 2410
Department - Computer Science Division - Tech &Bus
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: ☐ or ☐)

Semester Credit Hours #: Lecture hours#: Lab/other hours #  4:3:3
Equateed Pay hours for course – 4.5

Course Catalog Description – This course explains the principles of traffic control and access control lists (ACLs) and provides an overview of the services and protocols at the data link layer for wide-area access. Describes user access technologies and devices and discover how to implement and configure Point-to-Point Protocol (PPP), Point-to-Point Protocol over Ethernet (PPPoE), DSL, and Frame Relay. WAN security concepts, tunneling, and VPN basics are introduced. Discuss the special network services required by converged applications and an introduction to quality of service (QoS).

Prerequisites/Corequisites - Grade of C or higher in ITCC 1401, ITCC 1404 and ITCC 2408

Approvals – the contents of this document have been reviewed and are found to be accurate.

Prepared by Donna Schilling
Signature
Date 11/23/2009

Department Head Stephanie Dees
Signature
Date 11/23/2009

Division Chair Stephanie Dees
Signature
Date 11/23/2009

Vice President of Instruction or Dean of Vocational Instruction
Signature
Date 12-1-09
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):

- Describe the impact of Voice Over IP and Video Over IP applications on a network
- Identify and correct common network problems at layers 1, 2, 3, and 7 using a layered model approach
- Interpret network diagrams
- Describe the components required for network and Internet communications
- Implement basic switch security measures such as port security, trunk access, and management VLANs
- Explain the operation and benefits of using DHCP and DNS
- Configure, verify, and troubleshoot DHCP and DNS operations on a router
- Describe current network security threats and explain how to implement a comprehensive security policy to mitigate common threats to network devices, hosts, and applications
- Describe the functions of common security appliances and applications
- Describe recommended security practices to secure network devices
- Describe the purpose and types of access control lists (ACLs)
- Configure and apply ACLs based on network filtering requirements
- Configure and apply an ACLs to limit Telnet and SSH access to the router using the Security Device Manager command-line interface (SDM/CLI)
- Verify, monitor, and troubleshoot ACLs in a network environment
- Explain the basic operation of Network Address Translation (NAT)
- Configure NAT for given network requirements using SDM/CLI
- Troubleshoot NAT issues
- Describe different methods for connecting to a WAN
- Configure and verify a basic WAN serial connection
- Configure and verify a Point-to-Point Protocol (PPP) connection between Cisco routers
- Configure and verify Frame Relay on Cisco routers
- Troubleshoot WAN implementation issues
- Describe the importance, benefits, role, impact, and components of VPN technology
II. Course Learning Outcomes

<table>
<thead>
<tr>
<th>Course Learning Outcome</th>
<th>Method of Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work well in a team environment</td>
<td>Skills Exam; 70% of students will achieve a score no less than “3” according to the Skills Exam rubric</td>
</tr>
<tr>
<td>Think critically</td>
<td></td>
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<tr>
<td>Communicate well verbally and in writing</td>
<td></td>
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<tr>
<td>Manage projects appropriately</td>
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<tr>
<td>Demonstrate professionalism and ethical work habits</td>
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<tr>
<td>Describe, design, implement, and secure a physical network interconnection structure</td>
<td></td>
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<tr>
<td>Install, configure, monitor, maintain, and troubleshoot a network router operating system</td>
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</tbody>
</table>

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

No Required Text


IV. Suggested Course Maximum - 20

V. List any specific spatial or physical requirements beyond a typical classroom required to teach the course.
   Classroom: computer for each student. Lab equipment: Cisco routers, Cisco switches, CSU/DSU, ISDN Routers, TSU, Networking Cables and a minimum of one computer per student.

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

Module Tests, Lab Assignments, Homework Assignments, Individual Case Study, Comprehensive Final Exam and Comprehensive Skills Exam

<table>
<thead>
<tr>
<th>Skill Exam 25%</th>
<th>Case Study 4%</th>
<th>Labs/Homework 30%</th>
<th>Module Tests 16%</th>
<th>Final Exam 25%</th>
</tr>
</thead>
</table>

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

- [X] WECM Courses
  If needed, revise the Program SCANS Matrix & Competencies Checklist.