**Course Title** - Connecting Networks (CISCO 4)

**Course Prefix and Number** – ITCC 1479

**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
- [X] 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 discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students will also develop the knowledge and skills needed to implement IPSec and virtual private network (VPN) operations in a complex network.

**Prerequisites/Co-requisites** – Grade of C or better in ITCC 1475, ITCC 1476 and ITCC 1478

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**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):

- Hierarchical Network Design
- Connecting to the WAN
- Point-to-Point Connections
- Frame Relay
- Network Address Translation for IPv4
- Broadband Solutions
- Securing Site-to-Site Connectivity
- Monitoring the Network
- Troubleshoot the Network

II. Course Learning Outcomes

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Methods of Assessment</th>
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</thead>
<tbody>
<tr>
<td>Upon successful completion of this course, students will:</td>
<td>All outcomes will be assessed by one or more of the following:</td>
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<tr>
<td>1. Understand and describe different WAN technologies and their benefits.</td>
<td>Individual Projects</td>
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<td>2. Understand and describe the operations and benefits of virtual private networks (VPNs) and tunneling.</td>
<td>Tests and Quizzes</td>
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<tr>
<td>3. Configure and troubleshoot serial connections.</td>
<td>Lab Assignments</td>
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<tr>
<td>4. Configure and troubleshoot broadband connections.</td>
<td>Final Exam</td>
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<tr>
<td>5. Configure and troubleshoot IPSec tunneling operations.</td>
<td>Skills Exam</td>
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<tr>
<td>6. Monitor and troubleshoot network operations using syslog, SNMP, and NetFlow</td>
<td></td>
</tr>
</tbody>
</table>

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

- 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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Comprehensive Skills Exam</td>
<td>20-25%</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>20-25%</td>
</tr>
<tr>
<td>Labs/Homework</td>
<td>25-30%</td>
</tr>
<tr>
<td>Chapter Tests</td>
<td>20-25%</td>
</tr>
<tr>
<td>Attendance/Participation</td>
<td>0-15%</td>
</tr>
</tbody>
</table>

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.