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Spring 1-2016

ITS 150.01: CNNA 1 - Exploration - Networking Basics

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Missoula College

THE UNIVERSITY OF MONTANA

<p>ITS 150-01 - SP16 - Higgins, Networking Basics FACULTY: Wally Higgins - instructor Steve Shen - department head Campus E-mail: wally.higgins@umontana.edu Campus phone: 406-243-7922 OFFICE HOURS: Mon. & Wed. 11:00-12:00pm Tue 10:30-11am & 2:30-3:00pm As posted on office door, <u>or</u> by appointment. Emails are always good.</p>	<p>Spring 2016 January 25, 2016 - May 13, 2015</p> <p>CREDITS: 3 Final Exam: Thursday 5/12 8:00am-10:00am</p>
<p>COURSE DESCRIPTION: Introduction to the networking field including terminology; protocols; local-area and wide-area networks; the OSI model; topologies; IP addressing; cabling and cabling tools; routers and router programming; Ethernet and network standards; and wireless technologies.</p> <p>COURSE IMPLEMENTATION: Coursework (textbook) and all testing are done on-line in a multimedia format. Students need modern computer equipment capable of viewing text, html, audio, video, and flash animation. Hands-on labs and e-labs using simulation techniques are utilized.</p>	<p>PREREQUISITE:</p> <p>M 090</p>
<p>PERFORMANCE OUTCOMES: At completion of course, students will be able to:</p> <ol style="list-style-type: none">1. Compare and select appropriate internetworking devices to segment networks using the OSI model.2. Design IP addressing schemes using standard subnetting techniques.3. Choose a logical and physical LAN topology to solve networking problems.4. Evaluate networking media, connectors, wiring closets, structured cabling, and patch panels to meet networking requirements.5. Create, construct, and test a network using PC hardware and software, patch cables, installation of structured cabling, wireless, and digital test equipment.6. Prepare network documentation.7. Cooperate in engineering teams.	<p>REQUIRED RESOURCE:</p> <p><i>Network Pro, N10-005</i> LabSim, TestOut Publisher, 2012.</p> <p>ISBN: 978-1-1935080-43-5</p> <p>This is an online software package. Order directly from TestOut. The link and detailed instructions for setting up online account is listed below the Syllabus in Moodle. You may also order the textbook through the Bookstore; ask at checkout. Proceed with the same instructions for setting up account after receiving the product "key". Enroll in the ITS 150 - 01</p>

EVALUATION:

Assignments will be graded on a point system; total points possible will be announced at the start of each project. Quizzes and tests will also be on a point system. Total points earned will be divided by total points possible to get a percentage with grade conversion as follows:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D

FINAL GRADE: 25% chapter quizzes
 25% labs, lab tests
 25% homework
 25% on-line final

There are no points given for work turned in late; therefore, it is essential to meet all deadlines. If extraordinary circumstances arise, contact the instructor prior to deadline for options. In addition, because of the nature of the course, no incompletes will be given. Students who cannot finish within the semester will need to retake the course.

ACCOMMODATION:

Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely way. Please be prepared to provide a letter from your DSS Coordinator.

UM Coordinator: 243-4424
www.umt.edu/dss/

STUDENT CONDUCT CODE:

Students are expected to follow the University of Montana Student Code. The code includes the following:

Academic misconduct is defined as all forms of academic dishonesty, including but not limited to:

- Plagiarism: Representing another person's words, ideas, data or material as one's own.
- Substituting or arranging substitution, for another student during an examination or other academic exercise.
- Knowingly allowing others to offer one's work as their own.

Student Code copies are available at Student Services or

EXPECTATIONS/POLICIES:

1. Class structure will include lectures on new material, assignments, lab assignments, group discussions, research of current periodicals and Internet, review, handouts, and scheduled tests. Internet and e-mail are used extensively. Course curriculum (textbooks) and all tests are on-line. Quizzes are done in class.
2. As each project is assigned, total points possible, due date, and specific requirements will be announced. Remember to meet all deadlines; no points are given for late submissions.
3. Hands-on labs will be required.
4. Interactive exercises and e-labs will be assigned with each chapter.
5. All grades will be on the Moodle Course management system. If you are unfamiliar with Moodle, please do the tutorials early in the semester.

www.umt.edu/studentaffairs/

COURSE OUTLINE:

- I. Networking Basics
 - A. Overview
 - B. Topologies
 - C. Protocols - TCP,DHCP,etc.
 - D. Connectors
 - E. OSI/TCP\IP Models
 - F. Corresponding Cisco Book Chapters 0,1,3 & 10

- II. Cables and Connectors
 - A. Twisted Pair
 - B. Coaxial
 - C. Fiber Optic
 - D. Wiring Implementations
 - E. Corresponding Cisco Book Chapter 4

- III. Network Devices
 - A. Adapters
 - B. Devices - Hubs, Bridges, Switches
 - C. Internetwork Devices - Routers
 - D. Corresponding Cisco Book Chapter 7

- IV. Ethernet
 - A. Ethernet Architecture
 - B. Ethernet Specifications
 - C. Connecting Network Devices
 - D. Corresponding Cisco Book Chapter 5

- V. Network Implementation
 - A. IP Addressing
 - B. Address Assignment
 - C. Name Resolution
 - D. Routing
 - E. Nat and ICS
 - F. IP Version 6
 - G. Multicast
 - H. Voice over IP
 - I. Virtualization
 - J. Corresponding Cisco Book Chapters 2,6,8 & 9

- VI. Wireless Networking
 - A. Wireless Concepts
 - B. Standards
 - C. Security
 - D. Configuration
 - E. Closest Cisco Book Chapter 11