Laurus College

Basic Networking

NET 101

Course Syllabus

COURSE TITLE	**BASIC NETWORKING**
COURSE NUMBER	**NET 101**
INSTRUCTOR NAME	**FIRST LAST** **E-MAIL:** first.last@lauruscollege.edu
DATE OF COURSE START AND END	**ENTER TERM DATES HERE**
CREDIT / CLOCK HOURS	**_60__ CLOCK HOURS; _20___ LECTURE HOURS; __40__ LABORATORY HOURS;** **_15_ ADDITIONAL HOMEWORK TIME OUTSIDE CLASS; _4__ QUARTER CREDIT HOURS**
COURSE LENGTH	**_5_ WEEKS**
COURSE SCHEDULE	**MONDAY-THURSDAY** **START TIME: XX:00 XM** **END TIME: XX:00 XM** ***STUDENTS ARE GIVEN A 10 MINUTE BREAK DURING EACH HOUR OF SCHEDULED CLASS TIME**
WEB CONFERENCE	**THIS COURSE USES TECHNOLOGY TO AID IN DELIVERY OF INSTRUCTION. ALL STUDENTS WILL NEED TO LOGIN TO** http://lauruscollege-meetings.webex.com **AND LOCATE THE COURSE TITLE IN THE MEETING CENTER. THE PASSWORD TO ACCESS THE COURSE IS: Laurus1**
UNIT OF ACADEMIC MEASUREMENT (SELECT ONE)	**____ CLOCK HOURS** **__X_ QUARTER SYSTEM** **____ SEMESTER SYSTEM**

COURSE DESCRIPTION	Starting with an introduction to networks students gain an understanding about communication services, mail services, and management services. Students study networking standards and models, and study the various layers making up networking as a whole. Students gain an understanding of different network protocol and how each one differs from the other. Students explore networking media and learn to install protocols on various operating systems. They examine the difference between LANs and WANs, and the transport systems that serve them both. Other topics covered may include installing NICs in computers and configuring them for various types of networks. Network hardware such as hubs, repeaters, bridges, and routers may also be examined in this course.

REQUIRED TEXTS	**Guide to Networking Essentials, 6th Edition** *Greg Tomsho - Yavapai College* *ISBN-13: 9781111312527; 688 Pages PB; ©2011 Published*
RECOMMENDED TEXT	Books, Magazines, Websites & any articles pertaining to the IT and Networking industries. Instructors throughout each course reference these resources.
PURPOSE AND OBJECTIVES	This course serves as an introduction to computer networking. The objective of this course is to familiarize students with basic networking standards and models, and the various layers making up networking systems. This course provides the foundational information for computer networking to prepare students for advanced courses in the future.
METHOD OF INSTRUCTION	This course is a hands-on, laboratory-based course. Students will work directly on computers and directly with the computer hardware and software to gain familiarity with the tools and navigation of the computer. Laboratory time is accompanies lecture based instruction and individual work and study time.
ANTICIPATED STUDENT LEARNING OUTCOMES	**UPON COMPLETION OF THIS COURSE THE STUDENT SHOULD BE EXPECTED TO BE ABLE TO DO THE FOLLOWING:** ✓ Upgrade a stand-alone computer to a networked computer ✓ Create a shared folder on a network ✓ Create a patch table on a network ✓ Configure an IP address ✓ Create subnet masks
COURSE REQUIREMENTS	Students will be expected to attend class on a regular basis. Students will need to attend each class session equipped with the proper learning materials. Students should come to class prepared to record the information obtained during the lecture portion of the class. Students will be expected to participate in all class assignments and will be expected to work in groups and individually. Students can expect to spend an additional three hours weekly on class assignments outside of scheduled class time. This additional time will be spent completing assignments and projects for this class. College campuses are open and available to students for use for this additional homework time.

COURSE POLICIES

PROCESS FOR EVALUATION (GRADING POLICY)

The instructor of the course will determine the specific criteria for grading. Final letter grades will be assigned based on the grading scale set for the institution.

The grading scale for Laurus College is as follows:

Letter Grade	Quality Points/Definition	Numeric Grade	Calculated into GPA	Calculated into Completion Rate
A	4.0	95-100	Yes	Yes
A-	3.7	90-94	Yes	Yes
B+	3.3	87-89	Yes	Yes
B	3.0	83-86	Yes	Yes
B-	2.7	80-82	Yes	Yes
C+	2.3	77-79	Yes	Yes
C	2.0	73-76	Yes	Yes
C-	1.7	70-72	Yes	Yes
D+	1.3	67-69	Yes	Yes
D	1.0	63-66	Yes	Yes
F	0.0	62 and Below	Yes	Yes
W	Withdraw	*	No	No
I	Incomplete	*	No	No
IF	Incomplete Fail	*	Yes	Yes
TR	Transfer Credit	*	No	Yes
AU	Audit	*	No	No
PR	Proficiency/Life Credit	*	No	Yes
RF	Repeat Fail	*	No	Yes

Course Grade Weight(s):

Homework Deliverables: 25%
Laboratory Deliverables: 30%
Class Participation: 16%
Exams *(Mid-Term and Final)*: 29%

Engrade Prefix:

- ✓ *Course grade weights round to the nearest WHOLE number.*

DELIVERABLE TYPE	PREFIX
TESTOUT LABS	TOL
TESTOUT EXAMS	TEX
CHAPTER REVIEW QUESTIONS	CRQ
CASE PROJECTS	CPR
CHALLENGE LABS	CHL
HANDS-ON PROJECTS	HOP
CRITICAL READING OUTLINE	CRO
TESTOUT MID-TERM EXAM	TME
PARTICIPATION	PAR
ATTENDANCE	ATT
TESTOUT FINAL EXAM	TFE

<table>
<tr><td>CLASS PARTICIPATION AND ATTENDANCE</td><td>At Laurus College attendance is a vital aspect of student success. Instructors are required to take attendance during each class session, and Laurus administration reviews attendance records on a weekly basis. All attendance information will be considered part of the student's official school record and is available to Vocational Rehabilitation Counselors for review upon request. Absences with appropriate documentation provided may be considered excused. Excused absences will not lower the attendance element of the course grade. Students who will be absent from class should inform the instructor in advance wherever possible. Students attending school through a third party organization should contact their Vocational Rehabilitation Counselor, as well as their instructor, to inform them of any absence from class. It is the responsibility of the student to make-up missed assignments or exams if allowed so by the instructor. Unexcused absences can affect the attendance component of the course grade which may affect the student's overall course grade. The course grade will affect the student's satisfactory academic performance which can affect the student's academic and financial aid standing.

If you are unable to attend class, please contact your instructor via email at first.last@lauruscollege.edu, or call (805) 267-1690 so he or she may be able to assist you in making up missed work. Recorded class sessions are for student convenience, and students who miss a lecture may access the recorded sessions at any of the Laurus College campus locations in order to review the material missed during their absence.</td></tr>
<tr><td>CAMPUSES RESOURCES AND ONLINE LIBRARY</td><td>Onsite at each campus location, Laurus College maintains additional reference materials and resources for student use. These include dictionaries, encyclopedias, and other general and field specific reference materials. In addition to the onsite campus resources, students have access to thousands of additional resources to assist with their studies by way of the online library that Laurus College subscribes. The online library can be accessed both onsite and offsite via the college's website www.lauruscollege.com.

Proquest Online Library Login:
User Name: laurusproquest
Password: welcome</td></tr>
<tr><td>INTEGRITY OF STUDENT WORK</td><td>Plagiarism is a serious academic offense that will not be tolerated and may result in failure for an individual project, failure for the course, and dismissal from the college. See your Student Handbook for further information.</td></tr>
<tr><td>STUDENT SAFETY</td><td>To ensure student safety, Laurus College students are not permitted to enter the premise under the influence of alcohol or drugs, nor are students permitted to carry weapons of any kind. Laurus College practices a no tolerance policy with regard to these issues; therefore, students in violation of this policy will face immediate action by the college, which may include expulsion. See your Student Handbook for further details on this policy.</td></tr>
<tr><td>ROADMAP FOR SUCCESS</td><td>A successful student should anticipate the following timeline:
<table>
<tr><th>WEEK NO.</th><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>Total</th></tr>
<tr><td>Lectures</td><td>4.00</td><td>4.00</td><td>4.00</td><td>4.00</td><td>4.00</td><td>20.00</td></tr>
<tr><td>Discussions</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>5.00</td></tr>
<tr><td>Lab Assignments</td><td>7.00</td><td>7.00</td><td>7.00</td><td>7.00</td><td>7.00</td><td>35.00</td></tr>
<tr><td>Total Course Contact Hours</td><td>12.00</td><td>12.00</td><td>12.00</td><td>12.00</td><td>12.00</td><td>60.00</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Reading</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>5.00</td></tr>
<tr><td>Research</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>5.00</td></tr>
<tr><td>Assignments</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>1.00</td><td>5.00</td></tr>
<tr><td>Total Outside Study Hours</td><td>3.00</td><td>3.00</td><td>3.00</td><td>3.00</td><td>3.00</td><td>3.00</td></tr>
<tr><td>Total Course Hours</td><td>15.00</td><td>15.00</td><td>15.00</td><td>15.00</td><td>15.00</td><td>75.00</td></tr>
</table></td></tr>
</table>

FREQUENTLY ASKED QUESTIONS

When is the homework due?

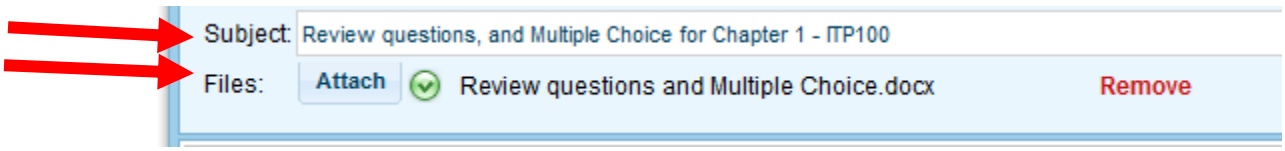
- *Homework is due twice a week on **Wednesday** and **Monday** after dispersed, unless your instructor grants an extension; or excuses the assignment.*

What happens if I lose my work, my computer crashes, I wash my flash drive with the laundry, or my dog eats my book and the computer?

- *In the unfortunate event, something does corrupt your work; your instructor may choose to excuse the assignment at his or her discretion. Keep in mind, instructors may also request that you prove mastery of the objective by other means. **Example:** Verbal or hands-on assessment in place of a TestOut Lab or Exam. <u>This excludes ALL mid-terms and final exams.</u>*

How do I submit my documents for grading, and how is the grade affected if it is submitted later than the specified due date?

- *Only <u>TYPED</u> documents using Microsoft Office Word 2007 (or later version), Rich Text Format (RTF), or Portable Document Format (PDF) are satisfactory for credit. Hand-written documents will not receive credit unless otherwise approved by the course instructor.*
- *Attach single documents to an email addressed to your instructor including information in the subject line describing the assessment you are submitting for a grade. **Example:***



- *If the attachment contains TWO OR MORE DOCUMENTS, please use the "**Compressed (Zipped) folder**" technique, and attach a single ZIPPED folder to your message.*
- *Please include a proper heading at the top of each document before submitting for a grade. **Example:***

First Last Name
Month XX, 2103
ITP100 @ 00:00am/pm
Your.Name@lauruscollege.edu

- *All tasks listed in the "Lab Exercises" section of the "Sequence of Instruction for the Term" starting on the next page are <u>DUE BEFORE THE END OF CLASS EACH SESSION</u>.*
- *For each day the homework is late without an extension, your submission will suffer ONE grade letter deduction up to five business days; in which time a maximum numeric grade of **<u>60</u> (or grade letter F)** is awarded. <u>No submission</u> results in a numeric grade of **<u>0</u>**. **Example:***

ON-TIME SUBMISSION	GRADE LETTER A	*100*
1 DAY LATE	GRADE LETTER A-	*93*
2 DAYS LATE	GRADE LETTER B	*83*
3 DAYS LATE	GRADE LETTER C	*73*
4 DAYS LATE	GRADE LETTER D	*63*
5 DAYS or MORE	GRADE LETTER F	*MAX 60*
NO SUBMISSION	GRADE LETTER F	*00*

SEQUENCE OF INSTRUCTION FOR THE TERM

<table>
<tr><th>CLASS SESSIONS</th><th>**DESCRIPTION OF CONTENT: HANDS-ON LABS VARY BY DAY DEPENDING ON STUDENT AND INSTRUCTOR SCHEDULES AND/OR LOCATIONS, AS WELL AS, AVAILABLE HARDWARE.</th></tr>
<tr><td rowspan="3"><u>WEEK 1</u>

Monday
Session 1</td><td>
<u>SYLLABUS & COURSE OVERVIEW</u>

<u>Syllabus Presentation:</u>
➢ Instructor-Led Demonstration(s):
○ Using the Book & Resources
○ Accessing Laurus College FTP Site
○ Accessing your @lauruscollege.edu e-mail account
○ Intruction for Assignments (LabSim & Documents)
○ Setting up your “LinkedIn” page
○ Using LabSim: Network Pro – Sections 0.2.2 and 0.2.4
<u>CHAPTER 1 – INTRODUCTION TO COMPUTER NETWORKS</u>

<u>Lecture</u>: Pages 1 through 26
➢ Lecture Topics:
○ An Overview of Computer Concepts
○ The Fundamentals of Network Communication
</td></tr>
<tr><td>
<u>Lab Exercises:</u>
➢ TestOut LabSim Exercises:
○ 0.0 Introduction
▪ 0.1 Course Introduction
• 0.1.1 Network Pro Introduction (5:07)
▪ 0.2 Using the Simulator
• 0.2.1 Using the Simulator (13:24)
• 0.2.2 Explore a Single Location in a Lab
• 0.2.3 Using the Simulator in Multiple Locations (5:08)
• 0.2.4 Explore Multiple Locations in a Lab
➢ General Processes:
○ Add IT Instructors and Administrative staff to “Contacts” in your @lauruscollege.edu account
○ Create your folder on FTP site in your class directory
○ Copy the “Student Files” ZIP folder from the FTP Site to your flash drive or Desktop
○ Create your LinkedIn page and join the Laurus College Group
○ Submit or turn in “Syllabus Acknowledgement” and “Book Receipt”
</td></tr>
<tr><td>
<u>Homework:</u>
➢ Critical Reading:
○ Read Chapter 1 – pages 1 through 50
○ Chapter 1 Outline
</td></tr>
</table>

<table>
<tr><td rowspan="3">Tuesday
Session
2</td><td><u>CHAPTER 1 – INTRODUCTION TO COMPUTER NETWORKS CONTINUED…</u>

Lecture: Pages 26 through 44
➢ Lecture Topics:
○ Network Terms Explained
○ Network Models</td></tr>
<tr><td>Lab Exercises:
➢ TestOut LabSim Exercises:
○ 1.0 Networking Basics
▪ 1.1 Networking Overview
• 1.1.1 Introduction to Networking (9:15)
• 1.1.2 Network Types (12:18)
• 1.1.3 Networking Terms (11:04)
• 1.1.4 Networking Facts
• 1.1.5 Exam Questions - Section 1.1
Hands-on Labs:
○ 1-1: Examining a Computer’s Boot Procedure – pages 9 through 11
○ 1-2: Upgrading a Stand-alone Computer to a Networked Computer – pages 15 and 16
○ 1-3: Viewing Network Software Layers – pages 21 and 22
○ 1-4: Using Ipconfig, Ping, and Arp – pages 22 through 25</td></tr>
<tr><td>Homework:
➢ Chapter Review:
○ Ch.1 Review Questions – page 53 through 58
○ Case Project 1-1 – page 59
○ Case Project 1-2 – page 59</td></tr>
<tr><td>Wednesday
Session
3</td><td><u>CHAPTER 1 – INTRODUCTION TO COMPUTER NETWORKS CONTINUED…</u>

Lecture: Pages 44 through 50
➢ Lecture Topics:
○ Network Servers
○ Specialized Networks
○ Watch and Discuss Flash Simulations 1 and 2 (Included with Book)</td></tr>
</table>

	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **1.0 Networking Basics** ▪ **1.2 Network Topologies** • 1.2.1 Network Topologies (13:26) • 1.2.2 Topology Facts • 1.2.3 Exam Questions - Section 1.2 **Hands-on Labs:** ○ 1-5: Exploring Peer-toPeer Networking – ***pages 38 through 40*** ○ 1-6: Creating a Shared Folder – ***pages 41 through 43*** ○ 1-7: Transferring a Document to Another Computer – ***page 43*** ○ 1-8: Looking up Computer and Networking Acronyms – ***pages 49 and 50***
	Homework: ➢ **Chapter Review:** ○ Case Project 1-3 – ***page 59*** ○ Case Project 1-4 – ***page 59*** ○ Case Project 1-5 – ***page 59*** ➢ **Critical Reading:** ○ Read Chapter 2 – ***pages 61 through 102*** ○ Chapter 2 Outline
ADDITIONAL RESOURCES ➢ **Flash Simulations (from CD with book):** ○ Simulation 1: Layers of Network Communication Process ○ Simulation 2: Communication Between Two Computers	
Thursday *Session 4*	**CHAPTER 2 – NETWORK HARDWARE ESSENTIALS** **Lecture:** Pages 61 through 77 ➢ **Lecture Topics:** ○ Chapter 1 Review Questions ○ Network Repeaters and Hubs ○ Network Switches

	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **1.0 Networking Basics** ▪ **1.3 Protocols** • 1.3.1 Network Architectures (7:03) • 1.3.2 Network Architecture Facts • 1.3.3 TCP/IP Protocol Suite (15:55) • 1.3.4 Common TCP/IP Protocols • 1.3.5 Exam Questions - Section 1.3 **Hands-on Labs:** ○ 2-1: Downloading and Installing a Protocol Analyzer – ***pages 69 through 72*** ○ 2-2: Using Wireshark with a Hub – ***pages 72 and 73 (If applicable)*** ○ 2-3: Using Wireshark with a Switch – ***pages 74 and 75***
	Homework: ➢ **Chapter Review:** ○ Ch.2 Review Questions – ***pages 102 through 106***
WEEK 2 **Monday** *Session* *5*	**CHAPTER 2 – NETWORK HARDWARE ESSENTIALS CONTINUED…** **Lecture:** Pages 77 through 88 ➢ **Lecture Topics:** ○ Chapter 1 Case Projects 1-1 through 1-5 ○ Chapter 1 Review Questions ○ Wireless Access Points ○ Network Interface Cards

	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **1.0 Networking Basics** ▪ **1.4 Network Connections** • 1.4.1 Network Connections (13:37) • 1.4.2 Configuring TCP/IP Properties (5:33) • 1.4.3 Internet Connectivity Parameters • 1.4.4 Configure TCP/IP Settings ○ **6.0 Wireless Networking** ▪ **6.1 Wireless Concepts** • 6.1.1 Radio Frequency Wireless (7:29) • 6.1.2 Wireless Architecture (9:41) • 6.1.3 Wireless Architecture Facts • 6.1.4 Wireless Infrastructure Facts • 6.1.5 Exam Questions - Section 6.1 ▪ **6.2 Wireless Standards** • 6.2.1 802.11 Wireless Standards (15:23) • 6.2.2 Wireless Standards Facts • 6.2.3 Infrared and Bluetooth (4:50) • 6.2.4 Infrared and Bluetooth Facts • 6.2.5 Exam Questions - Section 6.2
	Homework: ➢ **Chapter Review:** ○ Case Project 2-1 – ***page 108*** ○ Case Project 2-2 – ***page 108*** ○ Case Project 2-3 – ***page 108***
Tuesday *Session 6*	**CHAPTER 2 – NETWORK HARDWARE ESSENTIALS CONTINUED…** **Lecture:** Pages 88 through 100 ➢ **Lecture Topics:** ○ Chapter 2 Review Questions ○ Routers

	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **1.0 Networking Basics** ▪ **1.5 The OSI and TCP/IP Models** • 1.5.1 The OSI Model (5:33) • 1.5.2 OSI Model Facts • 1.5.3 OSI Model Layers (14:49) • 1.5.4 OSI Model Communications (4:47) • 1.5.5 OSI and TCP/IP Model Facts • 1.5.6 Exam Questions - Section 1.5 **Hands-on Labs:** ○ 2-6: Examining Properties of Your NIC – ***pages 86 through 88*** ○ 2-8: Using Trace Route to See How Packets Travel Throught the Internet – ***pages 99 and 100***
	Homework: ➢ **Critical Reading:** ○ Read Chapter 3 – ***pages 109 through 153*** ○ Chapter 3 Outline
ADDITIONAL RESOURCES ➢ **Flash Simulations (from CD with book):** ○ Simulation 3: Basic Operation of a Hub ○ Simulation 4: Basic Operation of a Switch ○ Simulation 5: How a NIC Works ○ Simulation 6: Router Operation in a Simple Internetwork	
Wednesday *Session 7*	**CHAPTER 3 – NETWORK TOPOLOGIES AND TECHNOLOGIES** **Lecture:** Pages 109 through 121 ➢ **Lecture Topics:** ○ Chapter 2 Case Projects 2-1 through 2-3 ○ Physical Topologies ○ Logical Topologies
	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **3.0 Networking Devices** ▪ **3.1 Network Adapters** • 3.1.1 Network Adapters (12:13) • 3.1.2 Network Adapter Facts • 3.1.3 Select and Install a Network Adapter • 3.1.4 Connect a Media Converter • 3.1.5 Exam Questions - Section 3.1
	Homework: ➢ **Chapter Review:** ○ Ch.3 Review Questions – ***pages 153 through 157***

Thursday *Session* *8*	**CHAPTER 3 – NETWORK TOPOLOGIES AND TECHNOLOGIES CONTINUED…** **Lecture:** Pages 121 through 150 ➢ **Lecture Topics:** ○ Chapter 3 Review Questions ○ Network Technologies
	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **3.0 Networking Devices** ▪ **3.2 Network Devices** • 3.2.1 Network Devices (16:51) • 3.2.2 Network Connection Device Facts • 3.2.3 Select a Networking Device 1 • 3.2.4 Select a Networking Device 2 • 3.2.5 Exam Questions - Section 3.2 ▪ **3.3 Internetwork Devices** • 3.3.1 Internetwork Devices (10:15) • 3.3.2 Internetwork Device Facts • 3.3.3 Select a Router • 3.3.4 Exam Questions - Section 3.3 **Hands-on Labs:** ○ 3-2: Determining and Changing Your Ethernet Standard – ***pages 133 through 136*** ○ 3-3: Viewing an Ethernet Frame – ***pages 136 and 137***
	Homework: ➢ **Chapter Review:** ○ Case Project 3-1 – ***page 159*** ○ Case Project 3-2 – ***pages 159 and 160*** ○ Case Project 3-3 – ***pages 160 and 161*** ➢ **Critical Reading:** ○ Read Chapter 4 – ***pages 163 through 200*** ○ Chapter 4 Outline
ADDITIONAL RESOURCES ➢ **Flash Simulations (from CD with book):** ○ Simulation 7: Ethernet Operation Using CSMA/CD ○ Simulation 8: Basic Wireless LAN Operation	
Week 3 **Monday** *Session* *9*	**CHAPTER 4 – NETWORK MEDIA** **Lecture:** Pages 163 through 184 ➢ **Lecture Topics:** ○ Chapter 3 Case Projects 3-1 through 3-3 ○ Wired Networking

	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **2.0 Cables and Connectors** ▪ **2.1 Twisted Pair** • 2.1.1 Twisted Pair (7:50) • 2.1.2 Twisted Pair Facts • 2.1.3 Connect to an Ethernet Network • 2.1.4 Exam Questions - Section 2.1 ▪ **2.2 Coaxial** • 2.2.1 Coaxial (7:41) • 2.2.2 Coaxial Cable Facts • 2.2.3 Connect a Cable Modem • 2.2.4 Exam Questions - Section 2.2 **Hands-on Labs:** ○ 4-1: Making a Patch Cable – ***pages 179 through 181*** ○ 4-2: Terminating UTP Cable – ***pages 181 through 183***
	Homework: ➢ **Chapter Review:** ○ Ch.4 Review Questions – ***pages 200 through 204***
Tuesday *Session 10*	**CHAPTER 4 – NETWORK MEDIA CONTINUED…** **Lecture:** Pages 184 through 197 ➢ **Lecture Topics:** ○ Chapter 4 Review Questions ○ Fiber-Optic Cable ○ Wireless Networking
	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **2.0 Cables and Connectors** ▪ **2.3 Fiber Optic** • 2.3.1 Fiber Optic (10:04) • 2.3.2 Fiber Optic Facts • 2.3.3 Connect Fiber Optic Cables 1 • 2.3.4 Connect Fiber Optic Cables 2 • 2.3.5 Exam Questions - Section 2.3 **Hands-on Labs:** ○ 4-3: Conducting End-to-End Testing – ***page 183***
	Homework: ➢ **Chapter Review:** ○ Case Project 4-1 – ***page 204*** ○ Case Project 4-2 – ***page 205*** ○ Case Project 4-3 – ***pages 205 and 206***
ADDITIONAL RESOURCES	

<table>
<tr><td rowspan="3">Wednesday
Session
11</td><td><u>REVIEW – MID-TERM</u>

Review: Chapters 1 through 4
➢ Lecture Topics:
○ Chapter 4 Case Projects 4-1 through 4-3
○ Review Chapters 1 through 4 Key Concepts</td></tr>
<tr><td>Lab Exercises:
➢ TestOut LabSim Exercises:
○ 2.0 Cables and Connectors
▪ 2.4 Wiring Implementation
• 2.4.1 Making Twisted Pair Cables (16:34)
• 2.4.2 Making Cable Facts
• 2.4.3 Wiring Distribution (6:53)
• 2.4.4 Using Punchdown Blocks (12:56)
• 2.4.5 Wiring Distribution Facts</td></tr>
<tr><td>Homework:
➢ Chapter Review:
○ Study for Mid-Term
○ Complete any unfinished assignments</td></tr>
<tr><td rowspan="3">Thursday
Session
12</td><td><u>MID-TERM EXAM</u>

Mid-Term:
➢ 30 questions: (90 minutes)
○ Must be completed within this timeframe
○ Review Mid-Term together as class discussion</td></tr>
<tr><td>Lab Exercises:
➢ TestOut LabSim Exercises:
○ 2.0 Cables and Connectors
▪ 2.4 Wiring Implementation
• 2.4.6 Connect Patch Panel Cables 1
• 2.4.7 Connect Patch Panel Cables 2
• 2.4.8 Exam Questions - Section 2.4</td></tr>
<tr><td>Homework:
➢ Critical Reading:
○ Read Chapter 5 – pages 207 through 254
○ Chapter 5 Outline</td></tr>
<tr><td><u>*ATTENTION!</u></td><td>➢ All assignments listed before the Mid-Term are due BY <u>FRIDAY</u> OF <u>WEEK 3</u>. Assignments are acceptable after, however, ONLY PARTIAL CREDIT will be awarded for late work.</td></tr>
<tr><td><u>WEEK 4</u>

Monday
Session</td><td><u>CHAPTER 5 – NETWORK PROTOCOLS</u>

Lecture: Pages 207 through 232
➢ Lecture Topics:
○ TCP/IPs Layered Architecture</td></tr>
</table>

13	**Lab Exercises:** ➢ **TestOut LabSim Exercises:** ○ **5.0 Network Implementation** ▪ **5.1 IP Addressing** • 5.1.1 IP Addresses (18:08) • 5.1.2 IP Address Facts • 5.1.3 Subnetting (16:08) • 5.1.4 Subnetting Facts • 5.1.5 Configure IP Addresses • 5.1.6 Exam Questions - Section 5.1 ▪ **5.2 Address Assignment** • 5.2.1 IP Address Assignment (11:00) • 5.2.2 APIPA (3:44) • 5.2.3 Addressing Method Facts • 5.2.4 Configuring a DHCP Server (5:31) • 5.2.5 Configure a DHCP Server • 5.2.6 Configuring Host Addressing (7:46) • 5.2.7 Configure a DHCP Client • 5.2.8 Exam Questions - Section 5.2 **Hands-on Labs:** ○ 5-1: Viewing TCP/IP Layers in Windows and Configuring Your IP Address – ***pages 210 and 211***
	Homework: ➢ **Chapter Review:** ○ Ch.5 Review Questions – ***pages 254 through 258***
Tuesday *Session* *14*	**CHAPTER 5 – NETWORK PROTOCOLS CONTINUED…** **Lecture:** Pages 232 through 251 ➢ **Lecture Topics:** ○ Chapter 5 Review Questions ○ IP Addressing

	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **5.0 Network Implementation** ▪ **5.3 Name Resolution** • 5.3.1 DNS (13:46) • 5.3.2 DNS Facts • 5.3.3 Configuring DNS (19:31) • 5.3.4 Configure DNS Addresses • 5.3.5 Exam Questions - Section 5.3 ▪ **5.4 Routing** • 5.4.1 Routing (11:19) • 5.4.2 Routing Facts • 5.4.3 Routing Protocol Characteristics (16:23) • 5.4.4 Routing Protocol Characteristics Facts • 5.4.5 Routing Protocols (9:01) • 5.4.6 Routing Protocol Facts • 5.4.7 Configuring Routing (19:08) • 5.4.8 Exam Questions - Section 5.4 **Hands-on Labs:** ○ 5-2: Identifying the TCP/IP Layers in a Frame – ***pages 211 and 212***
	Homework: ➢ **Chapter Review:** ○ Case Project 5-1 – ***page 260*** ○ Case Project 5-2 – ***page 260*** ○ Case Project 5-3 – ***page 260***
Wednesday *Session* *15*	**CHAPTER 5 – NETWORK PROTOCOLS CONTINUED…** **Lecture:** Pages 210 through 212 ➢ **Lecture Topics:** ○ Instructor Demos: ○ Hands-On Projects 5-1 through 5-6

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Lab Exercises:

- **TestOut LabSim Exercises:**
  - **5.0 Network Implementation**
    - **5.5 NAT and ICS**
      - 5.5.1 Network Address Translation (NAT) (13:23)
      - 5.5.2 NAT Facts
      - 5.5.3 Configuring a NAT Router (3:09)
      - 5.5.4 ICS Facts
      - 5.5.5 Sharing an Internet Connection (3:26)
      - 5.5.6 Share an Internet Connection
      - 5.5.7 Exam Questions - Section 5.5
    - **5.6 IP version 6**
      - 5.6.1 IP version 6 (16:02)
      - 5.6.2 Configuring IPv6 Addresses (20:35)
      - 5.6.3 IPv6 Facts
      - 5.6.4 Configure an IPv6 Address
      - 5.6.5 Exam Questions - Section 5.6

Hands-on Labs:

- 5-5: Using the ARP Command – ***page 221***
- 5-6: Using the NETSTAT program – ***pages 221 and 222***

Homework:

- **Chapter Review:**
  - Complete any unfinished assignments

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Thursday
Session
16

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CHAPTER 5 – NETWORK PROTOCOLS CONTINUED…

Lecture: Pages 1 through 14

- **Lecture Topics:**
  - Instructor Demos:
    - Hands-On Projects 5-7 and 5-8
    - Case Projects 5-1 through 5-3
  - Binary Conversion *(Pages 1 through 7 of Subnetting Workbook)*

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</table>

	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **5.0 Network Implementation** ▪ **5.7 Multicast** • 5.7.1 Multicast (8:16) • 5.7.2 Multicast Facts • 5.7.3 Exam Questions - Section 5.7 ▪ **5.8 Voice over IP (VoIP)** • 5.8.1 Voice over IP (VoIP) (7:17) • 5.8.2 VoIP Facts • 5.8.3 Configure VoIP 1 *(Extra Credit)* • 5.8.4 Configure VoIP 2 *(Extra Credit)* • 5.8.5 Configure VoIP 3 *(Extra Credit)* • 5.8.6 Exam Questions - Section 5.8 *(Extra Credit)* ▪ **5.9 Virtualization** • 5.9.1 Virtualization Overview (15:01) • 5.9.2 Virtualization Facts • 5.9.3 Virtual Networking (8:01) • 5.9.4 Using Virtual Networks (7:28) • 5.9.5 Virtual Implementation Facts • 5.9.6 Exam Questions - Section 5.9 **Hands-on Labs:** ○ 5-7: Working With DNS Tools – ***pages 229 through 231*** ○ 5-8: Working With DHCP Client – ***page 231*** ➢ **Challenge Labs:** ***(Optional if time permits)*** ○ 5-1: Capturing and Identifying the Three-Way Handshake – ***pages 258 through 259*** ○ 5-2: Creating a Subnet Mask – ***pages 259 and 260***
	Homework: ➢ **Critical Reading:** ○ Read Chapter 6 – ***pages 261 through 282*** ○ Chapter 6 Outline
ADDITIONAL RESOURCES ➢ **Flash Simulations (from CD with book):** ○ Simulation 9: The Changing Frame Header ○ Simulation 10: Demonstrating NAT / PAT	
Week 5 **Monday** *Session*	**CHAPTER 6 – NETWORK REFERENCE MODELS AND STANDARDS** **Lecture:** Pages 261 through 275 ➢ **Lecture Topics:** ○ Introducing the OSI and IEEE 802 Networking Models

17	**Lab Exercises:** ➢ **TestOut LabSim Exercises:** ○ **4.0 Ethernet** ▪ **4.1 Ethernet** • 4.1.1 Ethernet Architecture (17:56) • 4.1.2 Ethernet Facts • 4.1.3 Exam Questions - Section 4.1 ▪ **4.2 Ethernet Specifications** • 4.2.1 Ethernet Specifications (9:39) • 4.2.2 Ethernet Specifications • 4.2.3 Reconnect to an Ethernet Network • 4.2.4 Select an Ethernet Cable • 4.2.5 Exam Questions - Section 4.2 **Hands-on Labs:** ○ 6-1: Viewing Your MAC Address – ***pages 278 and 279***
	Homework: ➢ **Chapter Review:** ○ Ch.6 Review Questions – ***pages 282 through 285*** ➢ **Hands-On Projects:** ○ 6-2: Dragging and Dropping the OSI Model Layers – ***page 279***
Tuesday *Session* *18*	**CHAPTER 6 – NETWORK REFERENCE MODELS AND STANDARDS CONTINUED…** **Lecture:** Pages 275 through 280 ➢ **Lecture Topics:** ○ Chapter 6 Review Questions ○ IEEE 802 Networking Standards
	Lab Exercises: ➢ **TestOut LabSim Exercises:** ○ **4.0 Ethernet** ▪ **4.3 Connecting Network Devices** • 4.3.1 Connecting Devices (12:46) • 4.3.2 Device Connection Facts • 4.3.3 Connect Network Devices 1 • 4.3.4 Connect Network Devices 2 • 4.3.5 Exam Questions - Section 4.3
	Homework: ➢ **Chapter Review:** ○ Case project 6-1 – ***pages 286 and 287*** ○ Case project 6-2 – ***page 287*** ○ Case project 6-3 – ***page 288*** ➢ **Hands-On Projects:** ○ 6-3: Matching OSI Model Descriptions to Layer Numbers – ***pages 279 and 280*** ○ 6-4: Creating a Frame – ***page 280***

<table>
<tr><td colspan="2"><u>ADDITIONAL RESOURCES</u>

➢ Flash Simulations (from CD with book):
o Simulation 11: Peer Communication With the OSI Model
o Simulation 9: The Changing Frame Header</td></tr>
<tr><td rowspan="3">Wednesday
Session 19</td><td><u>FINAL REVIEW</u>

Review: Chapters 1 through 6
➢ Lecture Topics:
o Chapter 6 Case Projects 6-1 through 6-3
o Review Questions (Chapters 1 through 6)
➢ Instructor Demos:
o Challenge Lab:
▪ 6.1: Identifying OSI Model Layers from Captured Packets – page 286
▪ 6.2: Listing MAC Addresses in Your Network – page 286</td></tr>
<tr><td>Lab Exercises:
o Complete any unfinished assignments</td></tr>
<tr><td>Homework:
➢ Chapter Review:
o Study for final
o Complete any unfinished assignments</td></tr>
<tr><td rowspan="3">Thursday
Session 20</td><td><u>FINAL EXAM</u>

Final Exam:
➢ 60 questions:
o 120 minutes: Must be completed within this timeframe
➢ Lecture Topics:
o Review Final Exam Questions</td></tr>
<tr><td>Lab Exercises:
o Review Missed Questions</td></tr>
<tr><td>Homework:
➢ Chapter Review:
o Complete any unfinished assignments</td></tr>
</table>

Course Syllabus Acknowledgment Form

Course Number: NET101 **Course Name:** Basic Networking

Instructor: _____

Term Dates: _____

Program(s): Computer Networking

Campus: ☐ Atascadero ☐ San Luis Obispo ☐ Santa María ☐ Oxnard

By my signature below, I acknowledge that I have received a course syllabus for the above-mentioned course. This course syllabus outlines the details of this course as well as the expectations for me as a student and an outline of assignments and examinations for me to follow for the duration of the course.

_____

Student Name *(Print)*

_____ _____

Student Signature **Date**

Book Receipt Acknowledgement Form

Course Number: NET101 **Course Name**: Basic Networking

Program: Computer Networking

Term Dates:

Book(s):

Guide to Networking Essentials, 6th Edition
Greg Tomsho - Yavapai College
ISBN-13: 9781111312527
Published: 2011

By my signature below, I acknowledge that I have received the books and tools listed above for the Computer Networking Certificate program.

Student Signature Date

Print Name