West Los Angeles College - Summer Semester 2014

Welcome To CS991 – Cisco/VMware Networking Laboratory

Instructor: Associate Professor Marcus E. Butler, MCSE, CCNA, VCP5-DCV

Course Schedule: Online, Section #: 8030

Please read, and then print this syllabus for reference:

(1) This is a 100% online lab class with optional on-campus lab classes. In general, this format is called hybrid.

(2) There are no exams or homework assignments. There are, of course, lab configuration assignments completed using NetLAB. Cisco router/switch and VMware ICM based labs are reserved using NetLAB. Instructions for accessing NetLAB are below.

Access NetLAB at the following IP address: netlab.wlac-csit.com

NetLAB accounts have been created and activated as follows:

Student Name = John Brown, SID #: 883456789

Username: jobr56789,   Password: summer2014 (use when logging-in for the first time only)

After you login you will be requested to create your own personal (unique) Username and Password while creating your user profile. Once you create your own unique Username and Password you must be sure to remember it or write it down, because I do not have access to it.

Also, be sure to provide your email address when completing your user profile. If you fail to provide a valid email address in your profile you may miss important announcements generated by the website.

(3) You will schedule your own labs, but you are expected to complete on average four or five labs a week. Most labs should take less than 2.0 hours to complete.   You are expected to complete a certain number of labs per week. Your progress will be tracked via the NetLAB system.

(4) You can and will prepare for your labs by using the materials provided in the Cisco Academy website, the LabSim training CD, Cisco optional textbook or VMware eBook. This includes; reading the Cisco Academy modules, viewing multimedia lectures and lab configuration demos, reviewing fact sheets, performing lab simulation exercises.

(5) We will use "Private Messages" on the left-hand menu to communicate with each other. I will use ETUDES announcement system to publish important information. Once the course begins all questions, issues, or problems should be brought to my attention by sending emails to INSTRUCTOR (Marcus Butler) using the ETUDES "Private Message" system. In other words after the course start date do not sent emails related to this course to my WLAC email address.

(6) All other college/class rules will be enforced.

Instructor Contact Information

Instructor: Associate Professor Marcus E. Butler
Office on Campus: CE230
Office/Lab Hours: Will be announced
E-Mail: Butlerm@wlac.edu

Course Student Learning Outcomes – SLO's

1) At the end of the course, the successful student will be able to explain, define and discuss networking and Ethernet concepts.

2) At the end of the course, the successful student will be able to manage network resources and configure Cisco routers and switches.

3) At the end of the course, the successful student will be able to use the Cisco IOS Command-Line and utilities to perform administrative and troubleshooting tasks.

Course Objectives and Prerequisites

Course Objective:

CS991 is a lab course that supports both Cisco and VMware students. You are NOT required to complete assignments or labs related to both. Cisco students are required to complete Cisco labs and VMware students are required to complete VMware related labs.

Cisco students will be given access to Cisco hardware via NetLAB. Cisco students will use this access to improve hardware configurations skills and/or review for a Cisco certification exam.

VMware students will be given access to ICM 5.1 Pods via NetLAB. VMware students will use NetLAB to review and practice virtual administration tasks. This lab class does not qualify you to sit for the VCP-DCX certification exam. You must take and successfully complete CS987 in order to quality.

NetLAB access is 24/7 and you may schedule lab for anytime or any day.

Suggested Prerequisites:

Cisco Students: CS972 (Introduction to Cisco Networking Fundamentals) or equivalent experience

VMware Students: CS987 (VMware vSphere: Install, Configure, and Manage 5.1) or equivalent experience

Cisco students are expected to have experience working with the Cisco IOS command line and some exposure to Cisco hardware.

VMware students are expected to have a working understanding of the VMware Sphere environment, which includes; vSphere Client, vCenter, and ESXi Hosts.

Course Materials

Required Course Material:

The NetLAB Student User Manual/Documentation is the only required materials. The manual is available as PDF document at the following link. There is no charge for this documentation:

> http://www.netdevgroup.com/support/documentation/NETLAB_Student_Guide.pdf

Optional Cisco Course Material:
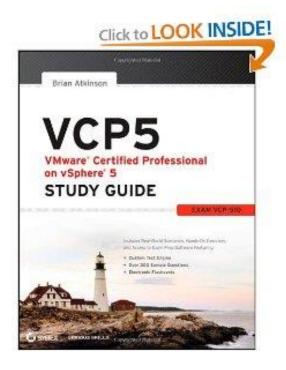
TestOut/LabSim Training Software Consisting of:

- • Course Simulation (multimedia lectures)
- • Lab Simulation (hands-on lab exercises)
- • Exam Simulation (contents-based practice exams)

Use the following instructions to place your order directly with TestOut:
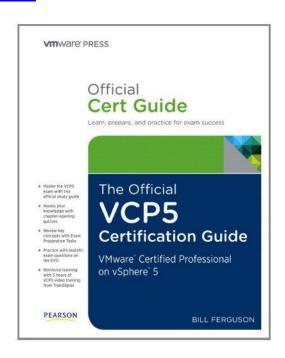
- What to order: CCNA LabSim (Exam: 200-120)
- Where to order: www.testout.com
- Promotional Code: 14-346TA
- School Name: West Los Angeles College (enter exactly as shown)
- Instructor Name: Marcus Butler

This software requires Internet access. Full functionality/access is available for one year. Academic pricing: $89 + Shipping + Tax. If you have any problem with ordering online you can reach Kelly Jorgensen at KJorgensen@testout.com or call 800.877.4889, Ext 234.

Optional VMware Course Materials – Study Guides:

http://www.amazon.com/VMware-Certified-Professional-vSphere-Study/dp/1118181123/ref=sr_1_1?s=books&ie=UTF8&qid=1345044326&sr=1-1&keywords=VCP5+Study+Guide

http://www.amazon.com/Official-Certification-Guide-VMware-Press/dp/0789749319/ref=pd_sim_b_2

Cisco Students: Schedule for Lab Assignments & Grading

The schedule is provided for your convenience. You have some flexibility as to when you complete lab configuration assignments. To complete most labs you should stay on a weekly schedule. Plan to do at least four or five labs a weeks. This pace will allow you to complete all the Suggested Labs for CS991.

CS991 is a Credit/No Credit course meaning you are not awarded a letter grade for the course. In order to receive your one-unit credit for this course you must complete at least 65% (approximately 39 labs) of the Cisco labs.

Here are some more suggestions to help you get started:

1. All labs are completed online using NetLAB.

2. There are over 60 labs related to working with Cisco routers and switches. It is not required to complete all labs nor is it necessary. Students can focus on those labs related to areas where their skills are deficient. You can do any lab, in any order you wish. Please be aware that every instance of the same lab you complete cannot and will not be graded. *So, if you complete the same lab multiple times, only the last completed lab will be used for course credit*.

3. CS991 students can do any lab they wish in any order they wish. But, I would suggest that you proceed as listed in the assignment table below. Also, consider the following comments;

4. If you have completed CS972, then you may wish to review/practice the CS972 Suggested Labs.

5. CS972 students can also continue on with CS974 Suggested Labs, if desired.

6. If you have completed CS974, then you may wish to review/practice by completing the CS972 and/or CS974 Suggested Labs.

7. If you have not completed any Cisco class(es), then you should start with the CS972 Suggested Labs. You will want to access the Cisco Academy online curriculum via NetLAB.

8. All labs are numbered. Lab numbers correspond to the Cisco Academy curriculum. **NetLAB and Cisco Lab Numbers are the same**. Generally, the first number refers to the chapter. You can use the lab number to cross-reference the chapter for review or to obtain additional details related to the lab's purpose.

9. You should preview each lab before proceeding. NetLAB provides a lab preview for each lab as a link when you schedule a lab.

10. Read the NetLAB Users Manual to learn how to reserve labs using the Scheduler. Labs under the Scheduler have Exercise Names. Each exercise includes complete lab instructions under the Preview Lab hyperlink. Before performing a lab you should always print out a copy of the Preview Lab for that particular lab.

Cisco Labs: Suggested Schedule

WEEK	DATES	LAB ASSIGNMENTS	POD
1st	6/16/2014	**All Students:** Understanding NetLAB Read the NetLAB Users Manual **CS972 Suggested Labs:** 5.3.5 Configuring Basic Router Settings using IOS CLI 6.1.5 Configure and Verify RIP 8.8.3a Managing Remote Network Devices with Telnet 8.8.3b Configuring a Remote Router Using SSH 9.2.5 Troubleshooting WAN Connectivity 9.4.2 Correcting RIPv2 Routing Problems **CS974 Suggested Labs:** 6.4.3.5 Building a Switch and Router Network 8.2.5.4 Identifying IPv6 Addresses 8.2.5.5 Configuring IPv6 Addresses on Network Devices 8.3.2.7 Testing Network connectivity with Ping and Traceroute 9.2.1.3 Designing/Implementing a Subnetted IPv4 Addressing 9.2.1.4 Designing/Implementing a VLSM Addressing Scheme	 BRPv2 BRPv2 BRPv2 BRPv2 BRPv2 BRPv2 MAP MAP MAP MAP MAP MAP
2nd	6/23/2014	**CS972 Suggested Labs:** 4.2.5 Calculating a VLSM Addressing Scheme 4.3.4 Configuring a LAN with Discontiguous Subnets 4.4.3a Configure and Verifying Static NAT 4.4.3b Configure and Verify Dynamic NAT 4.4.4 Configure and Verify PAT 5.2.3 Configuring RIPv2 with VLSM & Def Route Prop. 5.4.1 Implementing EIGRP 5.4.2 EIGRP Configuring Route Summarization **CS974 Suggested Labs:** 2.1.1.6 Configuring Basic Switch Settings 2.2.4.11 Configuring Switch Security Features 3.2.2.5 Configuring VLANs and Trunking 3.2.4.9 Troubleshooting VLAN Configurations 3.3.2.2 Implementing VLAN Security 5.1.2.4 Configuring Per-Interface Inter-VLAN Routing 5.1.3.7 Configuring 802.1Q Trunk-Based Inter-VLAN Routing 5.3.2.4 Troubleshooting Inter-VLAN Routing	 BRPv2 BRPv2 BRPv2 BRPv2 BRPv2 BRPv2 BRPv2 BRPv2 MAP MAP MAP MAP MAP MAP MAP MAP
3rd	6/30/2014	**CS972 Suggested Labs:** 6.2.1 Configuring and Verifying Single Area OSPF 6.2.2 Configuring OSPF Authentication 6.2.3a Controlling a DR/BDR Election 6.2.3b Configuring OSPF Parameters 6.2.4a Configuring & Verifying PTP OSPF 6.2.4b Configuring & Verifying Multi-Access OSPF 6.3.1 Configuring and Propagating an OSPF Def Route 6.3.2 Configuring OSPF Summarization	 BRPv2 BRPv2 BRPv2 BRPv2 BRPv2 BRPv2 BRPv2 BRPv2

WEEK	DATES	LAB ASSIGNMENTS	POD
3rd	6/30/2014	**CS974 Suggested Labs:** 6.2.2.5 Configuring IPv4 Static and Default Routes 6.2.4.5 Configuring IPv6 Static and Default Routes 6.5.2.5 Troubleshooting IPv4 and IPv6 Static Routes 7.3.2.4 Configuring Basic RIPv2 and RIPng 8.2.4.5 Configuring Basic Single-Area OSPFv2 8.3.3.6 Configuring Basic Single-Area OSPFv3	MAP MAP MAP MAP MAP MAP
4th	7/7/2014	**CS972 Suggested Labs:** 8.3.3 Configuring and Verifying Standard ACLs 8.3.4 Planning, Configuring and Verifying Ext ACLs 8.3.5 Configuring and Verifying Ext Named ACLs 8.3.6 Configuring and Verifying VTY Restrictions **CS974 Suggested Labs:** 9.2.2.7 Configuring and Verifying Standard ACLs 9.3.2.13 Configuring and Verifying Extended ACLs 9.4.2.7 Troubleshooting ACL Configuration and Placement 9.5.2.7 Configuring and Verifying IPv6 ACLs 10.1.2.4 Configuring Basic DHCPv4 on a Router 10.2.3.5 Configuring Stateless and Stateful DHCPv6	BRPv2 BRPv2 BRPv2 BRPv2 MAP MAP MAP MAP MAP MAP
5th	7/14/2014	**CS972 Suggested Labs:** 8.5.1 Configuring ACLs & Verifying with Console Log. 8.5.2 Configuring ACLs and Recording Activity 9.3.1 Troubleshooting RIPv2 Routing Issues 9.3.3 Troubleshooting OSPF Routing Issues **CS974 Suggested Labs:** 11.2.2.6 Configuring Dynamice and Static NAT 11.2.3.7 Configuring NAT Pool Overload and PAT 11.3.1.5 Troubleshooting NAT Configurations	BRPv2 BRPv2 BRPv2 BRPv2 MAP MAP MAP

WEEK	DATES	LAB ASSIGNMENTS	POD
6th	7/21/2014	**CS974 Suggested Labs:** 2.1.2.10 Building a Switched Network with Redundant Links 2.3.2.3 Configuring Rapid PVST+, PortFast, and BPDU Guard 5.1.1.9 Configuring Basic Single-Area OSPFv2 5.1.5.8 Configuring OSPFv2 Advanced Features 6.2.3.8 Configuring Multiarea OSPFv2 6.2.3.9 Configuring Multiarea OSPFv3 7.4.3.5 Configuring Basic EIGRP for IPv6	MAP MAP MAP MAP MAP MAP MAP
	7/27/2014	**Summer Semester Ends**	

Cisco Pods: Topology Diagrams

BRPv2 - Basic Router Pod Version 2 (See Page-3 for Topology Diagram)

http://www.netdevgroup.com/content/cnap/documentation/NETLAB_Basic_Router_Pod_Version_2.pdf

MAP – Multi-Purpose Academy Pod (See Page-4 for Topology Diagram)

http://www.netdevgroup.com/content/cnap/documentation/NETLAB_Multipurpose_Academy_Pod.pdf

Cisco Certification Exam Preparation

The exams are available for review and exam preparation. All exams are available for three attempts.

Exam or Skill Review	Availability
CS972: (RS Sem-1 & Sem-2) NB_ITN Practice Skills Assessment - PT RSE Practice Skills Assessment - PT Hands On Skills Exam CCENT (ICND1) Practice Certification Exam	June 16th to July 30th
CS974: (RS Sem-3 & Sem-4) NB_ITN Practice Skills Assessment RSE Practice Skills Assessment ScaN Practice Skills Exam EIGRP – PT ScaN Practice Skills Exam OSPF – PT CN Practice Skills Exam – PT Hands On Skills Exam Cert Practice Exam (ICND1) Cert Practice Exam (ICND2)	June 16th to July 30th

VMware Students: Schedule for Lab Assignments & Grading

A VMware student is someone who has successfully completed CS987 or has the equivalent experience. Each VMware student will be given access to his or her own pod for completing labs.

> Pod Overview: http://www.netdevgroup.com/content/vmita/

Pod assignment will be announced. Cisco students do not get access the VMware environment unless he or she has met the requirements.

The schedule is provided for your convenience. You have some flexibility as to when you complete lab configuration assignments. To complete most labs you should stay on a weekly schedule. Plan to do at least four or five labs a weeks. This pace will allow you to complete all the Suggested Labs for CS991.

CS991 is a Credit/No Credit course meaning you are not awarded a letter grade for the course. In order to receive your one-unit credit for this course you must complete Labs: 0 thru 21.

Here are some more suggestions to help you get started:

1. All labs are completed online using NetLAB.

2. There are 21 labs. Labs must be completed in sequence starting with Lab-0.

3. If you have not completed any VMware vSphere class(es), then you should consider taking CS987 during the Fall 2014 semester.

4. All labs are numbered and again must be completed sequentially

5. You should preview each lab before proceeding. NetLAB provides a lab preview for each lab as a link when you schedule a lab.

Read the NetLAB Users Manual to learn how to reserve labs using the Scheduler. Labs under the Scheduler have Exercise Names. Each exercise includes complete lab instructions under the Preview Lab hyperlink. Before performing a lab you should always print out a copy of the Preview Lab for that particular lab.

VMware vSphere Labs: Suggested Schedule

WEEK	DATES	LABS	LABS DESCRIPTONS
1ST	6/16/2014	ICM 5.1 Lab 0 ICM 5.1 Lab 1 ICM 5.1 Lab 2	Lab0: Installing ESXi Lab 1: Install VMware vSphere Graphical User Interfaces Lab 2: Configuring VMware ESXi
2ND	6/23/2014	ICM 5.1 Lab 3 ICM 5.1 Lab 4 ICM 5.1 Lab 5	Lab 3: Configure VMware vCenter Server Appliance Lab 4: Standard Virtual Switches Lab 5: Access iSCSI Storage
3RD	6/30/2014	ICM 5.1 Lab 6 ICM 5.1 Lab 7 ICM 5.1 Lab 8 ICM 5.1 Lab 9	Lab 6: Accessing IP Storage Lab 7: Managing VMware vSphere VMFS Lab 8: Working with Virtual Machines Lab 9: Using Templates and Clones
4TH	7/7/2014	ICM 5.1 Lab 10 ICM 5.1 Lab 11 ICM 5.1 Lab 12 ICM 5.1 Lab 13	Lab 10: Modifying a Virtual Machine Lab 11: Host Profiles Lab 12: Migrating Virtual Machines Lab 13: Managing Virtual Machines
5TH	7/14/2014	ICM 5.1 Lab 14 ICM 5.1 Lab 15 ICM 5.1 Lab 16 ICM 5.1 Lab 17	Lab 14: Manage vApps Lab 15: Access Control Lab 16: User Permissions Lab 17: Resource Pools
6TH	7/21/2014	ICM 5.1 Lab 18 ICM 5.1 Lab 19 ICM 5.1 Lab 20 ICM 5.1 Lab 21	Lab 18: Monitoring Virtual Machine Performance Lab 19: Using Alarms Lab 20: Using VMware High Availability Lab 21: VMware Distributed Resource Scheduler
	7/27/2014	**Semester Ends**	

VMware Certification Exam Preparation

Suggested exam preparation.

Exam or Skill Review	Availability
CS987: (VCP5 –DCV): Study Guides (See Optional Course Materials) Free Study Guides: http://go.veeam.com/vcp-vcap-study-guide-sponsorship.html VCP5 Mock Exam: http://mylearn.vmware.com/mgrSurvey/assess.cfm?item=24908&refer=0&p=0&ui=www_cert	Self Scheduled

Please Note:

"Students with disabilities who believe they may need accommodations in this class are encouraged to contact Supportive Services (310) 287-4450, FACE 16, as soon as possible to better ensure such accommodations are implemented in a timely fashion."

Drop Policy

If you choose to drop a course, it is your responsibility to do so by the end of the second week of class if you wish to receive a tuition refund. For compressed eight week semesters, you must drop by the end of the first week to receive a tuition refund. You will not be automatically dropped from your class for lack of participation.

If you drop a class after the fourth week of the semester has passed, you will receive a "W" grade for that class. If you drop a class after the tenth week has passed, you will receive an "F" grade for that class. If you drop a class after the second week has passed in a compressed eight week semester, you will receive a "W" grade for that class. If you drop a class after the fifth week has passed in a compressed eight week semester, you will receive an "F" grade in that class.

Important Drop Dates for Summer 2014:

·   Get a full refund: 6/24/14

·   Last day to add a class:

      Online: 6/16/14

      In-person: 6/24/14

·   File for "pass/no pass": 6/24/14

·   Drop class without a "W": 6/24/14

·   Drop class with a "W": 7/18/14

Special Needs and Disabled Students Policy

If you are a student with a disability and require accommodations, please send me a Private Message. The sooner I am aware of your eligibility for accommodations, the quicker I will be able to assist the Disabled Students Programs & Services (DSP&S) Office in providing them. The DSP&S Office provides special assistance in areas including: registration assistance specialized tutoring, academic and career guidance counseling, instructor liaison, special instruction and testing assistance. You can contact the Director of the DSP&S Office, Adrienne Foster, at fosteraa@wlac.edu describing the accommodations that are necessary.

Academic Integrity Statement

Academic integrity is a fundamental value of higher education and WLAC; therefore, acts of cheating, plagiarism, falsification or attempts to cheat, plagiarize or falsify will not be tolerated in this course. It is your responsibility to understand what plagiarism is and you can read about it here: http://www.plagiarism.org..

Any student caught cheating or plagiarizing will be subject to disciplinary action.

Online Student Resources

Online Student Helpdesk: http://www.wlac.edu/online/helpdesk.asp

Course Login: http://www.wlac.edu/online/logininfo.asp

Technical Requirements: https://etudes-ng.fhda.edu/portal/site/!gateway/page/4243c7b4-9b68-45fc-0016-148ad08653aa

ETUDES FAQ: http://www.wlac.edu/online/etudesfaq.asp

WLAC Homepage: http://www.wlac.edu

WLAC Online Homepage: http://www.wlac.edu/online

WLAC Online Counseling: http://www.wlac.edu/online/counselingonline.asp

WLAC Online Tutoring: http://www.wlac.edu/online/tutoring.asp

WLAC Library: http://www.wlac.edu/library/index.html

WLAC Bookstore: http://store450.collegestoreonline.com

Netiquette: http://www.albion.com/netiquette/corerules.html

Strategies for Online Learners: http://www.uidaho.edu/eo/dist8.html

Be a Successful Online Student:
http://www.ion.uillinois.edu/resources/tutorials/pedagogy/StudentProfile.asp

Tips for Online Success: http://www.ion.uillinois.edu/resources/tutorials/pedagogy/tips.asp