



Division: Computer Science and information Technology
Course name: Cloud, Virtualization, Linux Apache MySQL & Php (LAMP)
CS 967 Section: 8507 / Semester: Spring 2015

Instructor Name: Larry Wang

Class Hours: Saturday

9:00am – 12:00pm (CE104)

1 hour online (Etudes)

Office Hours: Saturday

Immediately following class

School Website: <http://www.wlac.edu>

Address: 9000 Overland Ave., Culver City, CA 90230

Instructor E-Mail: wangl2@wlab.edu

CS Division Website: wlab.edu-csit

Semester: Feb. 9 – Jun. 7, 2015, 16 Weeks

Welcome

This semester, you will review last few sections of Introduction to Linux (CS935) to get you prepared for the LPI Linux Certificate Exam. You will learn, with hands-on practice, how to bring LAMP to work, how the server virtualization work by creating virtual machines from the graphic user interface, install and configure a working Openstack Cloud all-in-one controller, custom create a virtual machine image, deploy virtual machines from the customized virtual machine image to the Openstack Cloud you created.

Course Description:

This course intends to provide students with hands-on experience on several most popular “open source” subjects: **LAMP**, Server Virtualization and OpenStack Cloud computing using Enterprise Linux. **LAMP**: a popular open source eCommerce software stack. Students will learn to create a dynamic website base on LAMP. **Server Virtualization**: a popular industrial practice/implementation, help increase IT agility and reduce costs by consolidating multiple operating systems to run on a single server, normalize hardware access by the operating system, isolate misbehaving applications and migrate running OS instances from one physical server to another. **OpenStack Cloud**: the most popular open source software for creating private and public cloud computing environment. Joint developed adopted by NASA’s, which enable NASA scientists to pool IT resources, use only those services they require, and release those resources for use by others when no longer needed. During the course, all these will be configured using Community Enterprise Linux (CentOS): an Open Source version of RedHat Enterprise Linux. The class sessions will start from building Linux working environment, setup LAMP application, create kickstart function on the LAMP server, utilize kickstart function to rapidly deploy virtual machines; build and configure OpenStack Cloud computing environment. Students, after install and configure LAMP as their work environment, will be required to form groups and choose from list of projects for his/her team. Course is concentrated on how to integrate and administer Linux services, and some but not totally on shell scripting and programming skills. Certain system monitoring, trouble shooting and performance tuning techniques will also be covered. Students are encouraged to bring in, if any, work problems to be discussed in the class.

Advised Prerequisites:

CS935 and be familiar with Linux directories and files permissions and one command line editor such as vi or nano. This course is an intermediate to advance Linux course, basic understanding of Linux concepts

will support students in succeeding the course. Knowledge of a command line editor will help students in manipulating various Linux system configurations and thus make the learning progress pleasant.

Recommended Materials:

1. "Unix and Linux System Administration Handbook", Evi Nemeth, Garth Snyder, Trent R. Hein, Prentice Hall; ISBN: 0131480057; ISBN13: 9780131480056
2. "Setting up LAMP: Getting Linux, Apache, MySQL, and PHP Working Together", Eric Rosebrock, Eric Filson, published by Sybex. ISBN-10: 0782143377; ISBN-13: 002-5211443378
3. "Deploying OpenStack", Ken Pepple, O'Reilly, ISBN-10: 9781449311056; ISBN-13: 9781449311056
4. "Cloud Essentials", Kirk Hausman, Susan L Cook, Telmo Sampaio, Sybex – A Wiley Brand, ISBN: 978-1-118-40873-5
5. "LPIC-1: Linux Professional Institute Certification Study Guide 3rd Ed." John Wiley & Sons, ISBN-10: 1118495632; ISBN-13: 978-1118495636

Course Objectives:

Upon successful completion of this course, students will be able to . . .

- A. Install and set up modern Linux operating system with LAMP software and logical disk management system configured.
- B. Install and setup a dynamic website from sample codes that is capable of create, select, update, delete functions on Linux operating system.
- C. Create and manage virtual disk system, install hypervisor, virtualize computer system and create virtual machines from graphic user interface.
- D. Work in a group/team setting to install, setup OpenStack Cloud, custom create machine image, deploy virtual machines from the machine images to the OpenStack cloud.

Institutional Learning Outcomes (ILOs) &

This course will also facilitate the following Institutional Learning Outcomes:

- A. Critical Thinking: Analyze problems by differentiating fact from opinions, using evidence, and using sound reasoning to specify multiple solutions and their consequences.
- B. Self-awareness/Interpersonal Skills: Apply self-assessment and reflection strategies to interpersonal, work, community, career, and educational pathways.
- C. Technical Competence: Utilize the appropriate technology effectively for informational, academic, personal, and professional needs.

Course Requirements and assignment guidelines

Course assignments have divided into TWO parts:

1. Writing assignments, midterm and final exams, which are administered by **WLAC online course shell ETUDES**.
 - o You have **ONE** week to subscribe the required material after semester starts.
 - o You will submit assignments, midterms and final exams via **WLAC online course shell ETUDES**.
 - o You must log on to [WLAC ETUDE](#) on regular basis to check the following:
 1. **Announcements** – You should check announcement every time you login, important announcement from the instructor will be posted here.
 2. **Syllabus** – Course syllabus and class rules is attached here.
 3. **Modules** – Will show each week's subjects, you will download the assignment answer template from here.

4. **Assignment & Test** – You will work on assignment and submit it from here. Deadline is posted.
Follow step a) b) c) d) e):
 - a) copy the review questions to a Word document and save it as a file on your hard drive or flash drive, or you can download each assignment from the corresponding modules.
 - b) click on “continue later”,
 - c) when you finish the “review question assignment” -> save it-> go to ETUDES-> open the assignment -> browse and upload it -> then click on “finish”,
 - d) once you click on “finish”, you can’t open and view it until the instructor releases the grade.
 - e) you can e-mail the instructor (wangl2@wlac.edu) requesting for the re-submit in case you need to.
5. Follow the schedule to work on “Assignments” and “Tests”. **Do not wait until the last minute** to work on the assignments.
6. Assignments will be graded base on the concept, keywords and accuracy.
7. **Assignments submitted after the due day will receive 10%-90% deductions** (one week late 10%, two weeks late 20% ...etc). The full credit for each assignment is 100 points.
8. **Midterms and final exams** - You will take exam including final exam and submit it from here , they will be graded by Etudes automatically, I’ll also take the highest value by the due date/time. Deadline is posted
9. **Discussion and Private Message** - You can communicate with the instructor here, however, for urgent issues, please send e-mail to the instructor via wangl2@wlac.edu.
10. You should print the “notes/facts” from every lesson and chapter which help you answer questions on the review question assignment and can be the study guide for exam too. For most of the questions in the assignment, you can find the answer from the lesson notes/facts. You will get full credit for assignment as long as your answer contains the KEY WORDS.
11. No **make up** exam. Once you have viewed or taken the exam, you can’t open or retake it. There are 2 midterms plus final exam, these exams will be held while in class, check the syllabus for exact dates. Use a clock when you start the exam. All exams are **timed exam!** **THERE IS NO MAKE-UP or RE-TAKE EXAM.**

2. Personal Projects:

There will be a list of personal projects that students can select to complete and earn extra credit points.

Grading

Assignment Category	Total Points	% of Total Grade
Class Projects Assignments	500	50%
Exams	100	10%
Final Exam	100	10%
Personal Projects	200	20%
Attendances, Survey	50 each	5% each
Grand Total	1000	100%
900 - 1000 = A	600 - 699 = D	599 and below = F

Class Policies

Attendance

Because class discussions and group work are an integral part of this course, attendance is mandatory. Up to 3 absences are allowed. After that, you could be dropped. Students are expected to attend every class meeting, to arrive on time and stay throughout the class period. **Excessive absenteeism will lower your grade, as well as walking in and out of class.** 3 tardies = 1 absence. Students may be dropped from class for excessive tardiness, or for failure to attend class the first day or during the entire first week of the class.

Walking In and Out of Class

When you arrive to class, make sure you have used the restroom, had a chance to eat, check your messages, etc. Walking in and out is rude and disruptive. If you need to leave early, or have some other problem, you need to notify me in advance. **Any student who makes a habit of walking in and out of class may be asked to leave.**

Preparedness

You are expected to arrive on time. You will come to each class session prepared. You will have your books, binder, pens/pencils, any work that is due, and you will be prepared to discuss all readings/assignments.

Cell Phones, iPods, etc.

Turn them off and put them away when class begins! Although it may not seem possible, you can survive without talking and texting on your cell phone, or listening to your iPod, for a little over an hour. Talking and texting on cell phones not only distract you, but they are a distraction for me and your peers. Distractions interrupt/disrupt the class and I will not tolerate interruptions. **You will be asked to leave if this occurs.**

“Netiquette” and “Civilogue”

This semester, you will post weekly responses to the class blog on various topics related to the class and the world around us. The term “netiquette” is a combination of the words internet and etiquette. The term “civilogue” is a combination of the words civil and dialogue. Both terms, as well as the words used to create them, are essential to the class. You may not agree with the views and opinions expressed by your peers, but you don’t have the right to be disrespectful. Personal attacks, profanity, vulgarity and comments that are not productive additions to the conversation will be deleted and you will not receive credit for the assignment.

Contacting Me

E-mail is the best and quickest way to contact me and I do read my email. Therefore, excuses such as, “I tried to contact you but” will not work. **If you have a problem, do not let it snowball.**

Contact instructor immediately.

Students are expected to ask questions and obtain help from instructor via email and/or during office hours.

For more information refer to the attached link:

http://www.wlac.edu/academics/pdf/WLAC_10-12Catalog_Policies.pdf

Departmental Resources:

CS Division Web Site: <http://www.wlac.edu/csit>, with the following information:

Division announcements - Scholarship and Internship opportunities

CS Instructor Office Hour and Computer Lab Open Hours

Petition for Degree and Certificate

Petition for Prerequisite Challenge

Declaration for a Major - to be eligible for scholarship and internship

Discount Voucher for CompTIA A+, Network+, Security+, Linux+

Free Software Download(Windows 7, Windows Server 2008, VMWare, Microsoft ACCESS and Visio Studio)

Requirement for AA/AS degree and Certificate of Achievement in the following :

Degree and Certificate in Computer Science (10 major courses)

Degree and Certificate in Computer Network and Security Management (10 major courses)

Degree and Certificate in Computer Web Support and Database Administration (10 major courses)

Certificate of Achievement in Computer Network Management (requires 6 courses)

Certificate of Achievement in Information System Security (requires 6 courses)

Certificate of Achievement in Business Application and Database Management (requires 6 courses)

Certificate of Achievement in Web Support and Administration (requires 6 courses)

New student email system :

<http://www.wlac.edu> -> For student -> middle of page -> Instructions and vidéo for student email system

Faculty advisor and major declaration

Please note that students must declare a major in order to become eligible for CS scholarship and internship opportunities. To declare a major, please obtain the form of change request from CS division website www.wlac.edu/csit click the link on the left menu.

By default, your instructor can be the faculty advisor; please see your instructor during the posted office hour OR you can make an appointment with the following fulltime faculty advisor:

Ashok Patil - Degree, transfer, and certificate in Computer Science- PatilA@wlab.edu

Anna Chiang - Degree, transfer and certificate in Computer Information Science/Computer Network and Security Management- ChiangA@wlab.edu

Marcus Butler - Microsoft, CISCO, VMWare training, ButlerM@wlab.edu

Manish Patel - Degree and certificate in Web development and Database Administration- PatelM@wlab.edu

Bill Vega (H1B coordinator) – Job placement assistance for students in the advanced classes such as CISCO network, Security, Web & Mobile development, Database & Computer Science, VegaWM@wlab.edu

Transfer Honors Program - <http://wlab.edu/transfer/index.html> - honors, This course is part of Transfer Honors Program, student need to go to the transfer center located in the Student Services Building-3rd floor (SSB 340), fill out the application form, submit application along with documents as indicated to the Transfer Honors Director, after you're notified of acceptance, then come back to ask instructor for extra credit works.

Exclusion Policy:

One or more missing class sessions/assignments before **Feb. 24** will result in being **excluded** unless you have permission from the instructor. **It is your responsibility** to drop the class. Failure to drop the class in a timely manner will result in a “W” or “F” on your transcript.

Incomplete Policy:

A Student who has successfully completed more than 75% of the course work and has communicated with the instructor with a justifiable explanation may be considered for an incomplete grade. With “incomplete” grade, the student must complete all missing assignments/exams/projects and notify the instructors to change grade within 1 year grace period.

College Policies:**Academic Integrity (Plagiarism)**

In accordance with code 9803.28, **academic dishonesty is prohibited and will not be tolerated in this class.** Violations of academic integrity include, but are not limited to, the following actions: cheating on an exam, plagiarism, working together on an assignment, paper or project when the instructor has specifically stated students should not do so, submitting the same term paper to more than one instructor, or allowing another individual to assume one’s identity for the purpose of enhancing one’s grade. Academic dishonesty of any type, such as cheating or knowingly furnishing false information, by a student provides grounds for disciplinary action by the instructor or college. In written work, no material may be copied from another without proper quotation marks, footnotes, or appropriate documentation.

- o **Plagiarism will result in a zero for the assignment, possible dismissal from the class and disciplinary action from the college. You will not receive credit for any essay missing previous drafts, citations and/or a Works Cited page.**

Student Conduct

According to code 9803.15, disruption of classes or college activities is prohibited and will not be tolerated. Refer to the catalog and the Standards of Student Conduct in the Schedule of Classes for more information.

Recording Devices

State law in California prohibits the use of any electronic listening or recording device in a classroom without prior consent of the instructor and college administration. Any student who needs to use electronic aids must secure the consent of the instructor. If the instructor agrees to the request, a notice of consent must be forwarded to the Vice President of Academic Affairs for approval (WLAC College Catalog).

For more information refer to the attached link:

http://www.wlac.edu/academics/pdf/WLAC_10-12Catalog_Policies.pdf

Campus Resources:

As stated earlier in this syllabus, **if you are having problems, don’t let them snowball.** Come and talk with me and check out some of the campus resources available to you.

Office of Disabled Student Programs and Services (DSP&S)

Location: Heldman Learning Resources Center (HLRC), Room 119 | (310) 287-4450.

West Los Angeles College recognizes and welcomes its responsibility to provide an equal educational opportunity to all disabled individuals. The Office of Disabled Students Programs and Services

(DSP&S) has been established to provide support services for all verified disabled students pursuing a college education. DSP&S students may qualify for: priority registration, registration assistance, special parking permits, sign language interpreters and assistive technology (WLAC College Catalog).

Instructional Support (Tutoring) & Learning Skills Center

Location: Heldman Learning Resources Center (HLRC) | (310) 287-4486

Improve your reading, language, vocabulary, spelling, math fundamentals and chemistry knowledge with convenient, self-paced computer-aided courses in the Learning Skills Center. Increase your knowledge and learning success: sign up for tutoring in various college subjects (WLAC College Catalog).

Library Services

Location: Heldman Learning Resources Center (HLRC) | (310) 287-4269 & (310) 287-4486

The WLAC Library provides instruction on how to use the online catalog, periodical and research databases. In addition to a large collection of books, periodicals and videos the WLAC Library has course textbooks which students may use while in the Library. Web access is available in LIRL as well as meeting rooms. The upper floors provide a beautiful view ideal for study (WLAC College Catalog).

for more information refer to attached link:

http://www.wlac.edu/academics/pdf/WLAC_10-12Catalog_Services.pdf

Important Dates:	
Activity	Date
Last date to Add/Audit traditional classes via web	Feb. 08/Sun
Last date to Add/Audit traditional classes in person	Feb. 20/Fri
Last date to Drop classes with a refund/no fees owed	Feb. 20/Fri
Last date to Drop classes without a "W"	Feb. 20/Fri
Last date to Drop classes with a "W"	May 08/Fri
Last date to File for Pass/No Pass	Feb. 20/Fri
Final Exam	Jun. 06/Sat

College Closed:	
President's Day (Weekend)	Fri, Feb 13 - Mon, Feb 16
Cesar Chavez	Tue, Mar 31
Spring Break	Sat, Apr 4 – Fri, Apr10
Memorial Day	Mon, May 26

CS967 Class Schedule – Spring 2015		9:00 a.m. – 12:00 p.m.	
NOTE: This syllabus and class schedule is subject to change if circumstances warrant it (e.g. student performance, etc.). Expect revisions and divergences.			
Week	Date	Course topics	Notes
CS967 – Cloud, Virtualization & LAMP			
1	02/14 Sat.	President's Day – School closed – No Class	School Closed
2	02/21 Sat.	<ul style="list-style-type: none"> Class project #1 – CentOS Linux 6.x Installation LAMP software installation LAB Network configuration 	Class Project #1: CentOS Linux 6.x Installation DVD will be provided. Exclusion eligibility.

		<ul style="list-style-type: none"> • Testing installation 	
3	02/28 Sat.	<ul style="list-style-type: none"> • Class Project #1 continue • CS935 Materials Review • CS967 Reading Plan 	CS935 Section 9 – 12 Exclusion effective
4	03/07 Sat	<ul style="list-style-type: none"> • CS935 Materials Review • Command Line editor • Personal Project Listing 	CS935 Section 9 - 12
5	03/14 Sat.	<ul style="list-style-type: none"> • Mid-Term #1 	On Campus
6	03/21 Sat.	<ul style="list-style-type: none"> • Mid-Term review • Web Server – http • General Linux review 	
7	03/28 Sat.	<ul style="list-style-type: none"> • Class project #2 – Build kickstart server with web server • LAMP introduction • MySQL introduction 	Class Project #2: Kickstart Server
8	04/04 Sat	<ul style="list-style-type: none"> • Spring Break 	School Close
9	04/11 Sat	<ul style="list-style-type: none"> • Configure PHP • Configure HTTPS • Class project #3: Self-Sign SSL Certificates 	Class Project #3: Self-signed SSL cert.
10	04/18 Sat.	<ul style="list-style-type: none"> • Basic shell scripting • Positional Parameters • Useful Linux Command List • Working with the “Default” bash 	
11	04/25 Sat	<ul style="list-style-type: none"> • Mid-Term #2 	On Campus
12	05/02 Sat.	<ul style="list-style-type: none"> • Class project #4: Create VM using GUI • Virtualization overview • Server virtualization 	Class Project #4: Create Virtual Machine using KVM virt-manager
13	05/09 Sat.	<ul style="list-style-type: none"> • Networking Overview • TCP/IP OSI 7-Layer Model brief review • Network address • PHP codes for DEMO package 	
14	05/16 Sat.	<ul style="list-style-type: none"> • Openstack Cloud Installation • Configure major functions of Openstack Cloud. i.e. Dashboard, nova, glance, EBD and Object Storage 	Class Project #5-1 : Install Openstack Cloud Software
15	05/23 Sat.	<ul style="list-style-type: none"> • Create customize virtual machine image • Upload image with glance to cloud • Deploy instances from customized machine image 	Class Project #5-2: Create customize virtual machine image
16	05/30 Sat.	<ul style="list-style-type: none"> • Personal Project Due • Openstack Cloud Installation continue 	Personal Projects Due for extra points

17	06/06 Sat.	Final Exam NOTE: The date and time for the Final Exam could change. You will be notified well in advance if this is the case.	
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Student Acknowledgment

(Please return this sheet to the instructor)

"I _____, have completely read this syllabus and understand and agree to the course requirements."

Please indicate below, any special needs or circumstances that may have some impact on your work in this class, and for which you may require special accommodations, including but not limited to physical or mental disabilities, inability to arrive in class on time or need to leave class early, observance of religious holidays, ect.

Special needs or circumstances:
