MIS 7397 Open Systems (The "LAMP" Class) (updated 08/15/2023)

Instructor: **Jake Messinger**

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Hours: **By Appointment**

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Suggested Texts: Red Team Field Manual

COURSE DESCRIPTION: Due to the fast growing move to virtualizing and putting everything in "The Cloud", this will quickly become a very important class, hopefully a permanent and required one in the CBA. You will learn things important and useful to you in your work. The purpose of this course is to introduce you to the Linux Operating System (which lives on 80% of hardware out there, including most cell phones) and Server Virtualizing Technologies. There is a race to get EVERY server in the corporate world off "bare metal" and into "The Cloud." We will talk about WHY and then we will DO IT! Areas covered will include server hardware and installation, different virtualizing platforms, clustering (HA), management and security and performance enhancement. We will do some programming with PhP which will create web pages (Apache) based on data in MySQL database tables. We will install and compare different virtual platforms including VirtualBox, Proxmox, VMWare and Citrix Xen Server/Desktop.

THE LECTURER: First, I am not a full time professor. I am a part tme Adjunct Professor. This is mostly good for you. I am working daily in the industry so I have extensive practical experience. In other words, I am going to teach you what you need to know to get a job in today's MIS world. I teach this class and also 4477 Networking and Security Infrastructure, also a very important class these days to MIS majors.

I am a graduate of the University of Houston with Degrees in Computer Science and Business with Concentrations in MIS and Phychology. I began as a programmer when I was 15, and later became a partner in my father's medical billing business. We managed databases and processed medical claims for doctors in the Southeast Texas area. I wrote most of the software we used for that. I also wrote some of the first "EDI" software used to trasmit standardized claim data to Medicare. I also was a contributor to the "LINUX" project, specifically in the areas of networking and printing. I was attending U of H at the birth of the World Wide Web. Dr Parks asked me to teach his classes in 1995, when he took a 1 year project in California. During that time, I converted the Transaction Processing Classes (1 and 2) from mainframes to PC based systems. I also set up the first DISC Department server and was one of the first intructors to use web pages to aid in teaching the class. I have taught just about every class in the MIS department, but I am best known for the 4477 Datacomm class, now called Networking and Security Infrastructure. I am president and founder of Adjecta Technologies, a VoIP and Cloud Hosting networking company. I often hire current and former students as interns.

LECTURES: Attendance AND participation is VERY IMPORTANT to your grade. If you want to guarantee yourself a good grade, come to class, participate and ask questions. **Participation** will impact your grade **significantly**. There is a book for this class but it is not mandatory. We will cover some items from the book, but the technologies and methodologies have changed and evolved so much that the text has not kept up. We will make extensive use of WiKi's and other external sources as well as current events in the news. If you are a good researcher, then you probably do not need the book. Notes for each lecture along with slide presentations will be made available online, typically prior to the lecture. Notes for each lecture along with slide presentations will be made available online, typically prior to the lecture. Please let me know if you have any ADA requirements. See below regarding ONLINE Classes***.

LABS: This is a hands-on class. One great way to learn about networking and security is to experience it first hand. The EiLab is in room 122. Your Cougar card should already be activated for entry. Please do not alter or use any equipment in the lab until after our first lab meeting, after you have become familiarized with the equipment. For some class periods, we may meet in the lab OR we may adjourn to the lab during a class. We will perform networking "experiments" in the lab which involves building a network, packet sniffing, firewall set up management and more. *** IF this semester is being taught durnig a COVID-19 designated semester (Hy-flex), phyiscal lab access is not required. See ONLINE Classes below ***

RULES: No eating of "loud" food. Drinks are okay but not in the lab. Do not cheat on any assignments or tests or you will be dropped probably with an F. The University has specific rules on Academic Honesty. Check out: https://www.uh.edu/provost/policies/honesty/

***ONLINE CLASSES:** If you have signed up for a Hy-Flex section or social distancing has been mandated due to Covid-19, this class will be presented synchronously (in real-time) using Zoom (or maybe Microsoft Teams). Students who attend the Zoom/Teams meetings need to have a camera and video turned on so I can verify your participation. This does not apply if you have chosen the asynchronous option. Students will receive an email before each class with the Zoom link and password. *Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the Center for Students with Disabilities. If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with anyone without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.*

ASSIGNMENTS: You will have at least 10 assignments/projects that all build upon one another. In other words, you will not be able to continue until you have completed the previous assignment (wheher or not it is graded). There are possible points awarded for attendance, participation and an optional project.

EXAMS: This is a 100% project based/group assignment class. You are graded on the completion of the projects as well as participation. To receive grades, you will be given assignments and surveys to complete by the due dates. There will be a final exit survey which must be completed to receive a grade. Deadlines and expected progress will be announced and graded periodically throghout the semester..

CHANGES: Check my website and this syllabus often for announcements and schedule changes. I will typically email the class if and when changes are made.

GRADING: I will attempt to post grades in a timely manner. Calculated percentages correlate to the following letter grades:
A=92.5-100, **A-**=89.5-92.4, **B+**=87.5-89.4, **B**=82.5-87.4, **B-**=79.5-82.4, **C+**=77.5-79.4, **C**=72.5-77.4, **C-**=69.5-72.4, **D+**=67.5-69.4, **D**=62.5-67.4, **D-**=59.5-62.4, **F**=<59.4

SCHEDULE (subject to frequent adjustment) (UH Academic Calendar)

Last Day to Drop without a grade: See the calendar
Last Day to Drop or withdraw with a "W": See the calendar
Last Day of Class: See the calendar

LAB Days Attendance Recommended/Required

Introduction	
(1) (First Day of Class) Introduction to Course: What is LAMP?	(2) History of Open Systems

Part 2	
(3) **Introduction to Linux**	(4) ***Last Day to drop without receiving a grade.*** ***(See UH Academic Calendar for specific Date.)*** Virtual Environments: Proxmox
(5) Citrix, Xen Desktop, VMWare, ESXi, Virtualbox	(6) TCP/IP (network and transport layers)
(7) TCP/IP and NAT (Network Address Translation)	(8) Linux Tutorials (Cont)
(9)	(10)
(11) Project 1 Due IN CLASS / ONLINE PARTICIPATION REQUIRED (unless otherwise approved)	12)

Part 2	
(13) Networking/Firewalling	(14) Networking/Firewalling
(15) Webservers / Apache	(16) ***Last Day to drop or withdraw with a "W".*** ***(See UH Academic Calendar for specific Date.)*** Databases / MySQL
(17) Programming / Scripting Languages: PhP	(18) Virtualmin
19)	(20) Authoring Applications: Wordpress
(21)	

Part 3

(22) VirtualBox	(23) VMWare
(24) Citrix and HyperV	(25) Plugins
(26) eCommerce	(27) A.I.
(28) Last Day of Class **Final Projects due**	

END OF MIS 7397 Syllabus - General