San José State University
College of Engineering,
Department of Computer Engineering
CMPE 283-01, Virtualization Technology
Fall 2013

Instructor:	Simon Shim
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Office Hours:	Monday: 4:15 – 5:15pm, Wednesday: 4:30-5:30pm.
Class Days/Time:	M 6:00pm – 8:45pm
Classroom:	Clark 222
Prerequisites:	CMPE 142 operating systems or instructor's consent

Course Website

Copies of the course materials such as the syllabus, major assignment handouts, etc. may be found on http://groups.yahoo.com/group/sjsu-cmpe283-fall2013 **and canvas**
You need to supply your real name (as shown in the SJSU system) when joining the group.

Course Overview

CMPE 283 explores virtualization architectures, practices, and technologies that provide the foundation for the research and development of virtualized systems. Emphasis is placed on VMWare virtualization and its architecture and methodologies.

Course Learning Objectives

The learning objectives of CMPE 283 are to provide individuals with an understanding of and experience with:

- Understand the principles, technologies, and infrastructures of system virtualization
- Understand different technologies and products for virtualization

- Build solutions with software virtualization components
- Use existing virtual solutions to explore virtual machine life cycle operations (e.g., create, destroy, start, stop and migrate)

Program Outcomes (PO)

	Description
PO 1	Be able to demonstrate an understanding of advanced knowledge of the practice of software engineering, from vision to analysis, design, validation and deployment.
PO 2	Be able to tackle complex engineering problems and tasks, using contemporary engineering principles, methodologies and tools.
PO 3	Be able to demonstrate leadership and the ability to participate in teamwork in an environment with different disciplines of engineering, science and business.
PO 4	Be aware of ethical, economic and environmental implications of their work, as appropriate.
PO 5	Be able to advance successfully in the engineering profession, and sustain a process of life-long learning in engineer or other professional areas.
PO 6	Be able to communicate effectively, in both oral and written forms.

Course Learning Objectives (CLO)

	Description
CLO 1	Understand the principles, technologies, and infrastructures of system virtualization
CLO 2	Understand technologies and products for virtualization
CLO 3	Build solutions with software virtualization components
CLO 4	Use existing virtual solutions to explore virtual machine life cycle operations

Course Learning Objectives Support Program Outcomes

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CLO 1	X	X				
CLO 2	X	X				
CLO 3	X	X				
CLO 4		X				

How This Course Will Be Conducted

This course includes interactive discussions and hands on software development and research relating to computing methodologies and technologies for distributed systems. Consequently, a considerable level of effort and time will be required for research and software development (multiple software projects). Details follow.

Class/Lecture. Class discussion is an interactive exploration of concepts and ideas focusing on real world situations (businesses, institutions, and research).

Course Textbook. A specific textbook(s) is not required for this course. You are encouraged to use all resources normally available in a working environment (e.g., books, Internet, papers, discussions, virtualization software packages, sample code).

Recommended Reading. Suggested reading and reference material include (not required) the books below and online resources.

Mastering VMware vSphere 5, Scott Lowe

Grading. End of term grades are assigned using a curve based on accumulated points from the following areas:

Task	**Point Value**
Projects	30
Labs	25
Quizzes and Assignments	20
Final Exam	25
	100

Note: percentages and points may change due to course/project/time adjustments.

Grade	**Overall Score**
A+	95-100
A	90-94
B+	85-89
B	80-84
C+	75-79
C	70-74
D+	65-69
D	60-64
F	0-59

Projects

Projects are an opportunity to further explore discussions through practical experience. In order to maximize interactions, a team and individual approach is used to foster perspectives and collaboration.

Dropping and Adding

Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Information on add/drops are available at http://info.sjsu.edu/web-dbgen/narr/soc-fall/rec-298.html. Information about late drop is available at http://www.sjsu.edu/sac/advising/latedrops/policy/ **.** Students should be aware of the current deadlines and penalties for adding and dropping classes.

Assignments and Grading Policy

(Insert your enumerations and brief descriptions for the course assignments here, and indicate how each assignment is aligning with the learning outcomes. Include information about due dates and assignment weights. Specify grading policies including how grades are determined, what grades are possible, whether extra credit is available, what the penalty is for late or missed work, and what constitutes a passing grade for the course. Include the date of the final exam/s. If you grade on participation, indicators on how participations will be assessed should be included. Attendance per se shall not be used as a criterion for grading according to Academic Policy F-69-24.)

University Policies

Academic integrity

Students should know that the University's Academic Integrity Policy is availabe at http://www.sa.sjsu.edu/download/judicial_affairs/Academic_Integrity_Policy_S07-2.pdf. Your own commitment to learning, as evidenced by your enrollment at San Jose State University and the University's integrity policy, require you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The website for Student Conduct and Ethical Development is available at http://www.sa.sjsu.edu/judicial_affairs/index.html.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person's ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include in your assignment any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Policy F06-1 requires approval of instructors.

Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the DRC (Disability Resource Center) to establish a record of their disability.

Student Technology Resources (Optional)

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall and on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.

A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include digital and VHS camcorders, VHS and Beta video players, 16 mm, slide, overhead, DVD, CD, and audiotape players, sound systems, wireless microphones, projection screens and monitors.

Learning Assistance Resource Center (Optional)

The Learning Assistance Resource Center (LARC) is located in Room 600 in the Student Services Center. It is designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. The center provides support services, such as skills assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. The LARC website is located at http:/www.sjsu.edu/larc/.

SJSU Writing Center (Optional)

The SJSU Writing Center is located in Room 126 in Clark Hall. It is staffed by professional instructors and upper-division or graduate-level writing specialists from each of the seven SJSU colleges. Our writing specialists have met a rigorous GPA requirement, and they are well trained to assist all students at all levels within all disciplines to become better writers. The Writing Center website is located at http://www.sjsu.edu/writingcenter/about/staff//.

Peer Mentor Center (Optional)

The Peer Mentor Center is located on the 1st floor of Clark Hall in the Academic Success Center. The Peer Mentor Center is staffed with Peer Mentors who excel in helping students manage university life, tackling problems that range from academic challenges to interpersonal struggles. On the road to graduation, Peer Mentors are navigators, offering "roadside assistance" to peers who feel a bit lost or simply need help mapping out the locations of campus resources. Peer Mentor services are free and available on a drop –in basis, no reservation required. Website of Peer Mentor Center is located at http://www.sjsu.edu/muse/peermentor/ .

CMPE 283, Virtualization Technology

The schedule is tentative and subject to change. It is an outline of the material covered in the class, but the dates might shift forward or backward.

Week	Topics
Week 1 (8/26)	Greensheet
Week 2 (9/2)	Labor Day, Campus Closed
Week 3 (9/9)	Introduction
Week 4 (9/16)	VMWare introduction
Week 5 (9/23)	Virtualization Environments and Tools
Week 6 (9/30)	Software Virtualization
Week 7 (10/7)	Software virtualization
Week 8 (10/14)	Software Virtualization
Week 9 (10/21)	Hardware virtualization
Week 10 (10/28)	Hardware virtualization
Week 11 (11/4)	Advanced Virtualization Concepts
Week 12 (11/11)	Veteran's Day, Campus Closed
Week 13 (11/18)	Virtualization services
Week 14 (11/25)	Storage virtualization
Week 15 (12/2)	Project Presentation
Week 16 (12/9)	Project Presentation
Monday December 16 17:15 – 19:30	Final Exam