

**San José State University
College of Engineering
Graduate and Extended Studies
CMPE-284: Storage and Network Virtualization
Fall 2017**

Course and Contact Information

Instructor:	Dr. Thomas Hildebrand
(Virtual) Office Location:	Boccardo Business Center, Room 220
Telephone:	650-996-9813 (use only for urgent matters - email is preferred)
Email:	thomas.hildebrand@sjsu.edu
(Virtual) Office Hour:	After each class
Class Days/Time:	Tuesdays, 18:00 – 20:45
Classroom:	Boccardo Business Center, Room 220
Virtual Classroom:	N/A. Classes are in-person
Prerequisites:	Classified graduate standing or graduate advisor consent
Canvas Website:	https://sjsu.instructure.com

Canvas Format and Canvas Learning Management System

This course will be taught primarily face-to-face. Course materials, syllabus, assignments, grading criteria, exams, and other information will be posted on the SJSU Canvas course site at <http://sjsu.instructure.com/> You are responsible to check Canvas regularly for class work and exams. You also can find Canvas video tutorials and documentations at <http://ges.sjsu.edu/canvas-students>

If you have questions regarding the use of Canvas and/or WebEx, please file a ticket at <http://ges.sjsu.edu/instructional-design-help>

Faculty Web Page and MYSJSU Messaging

To participate in class activities, you are also responsible for regularly checking your email at <http://my.sjsu.edu> (or other communication system as indicated by the instructor) to learn of any updates.

Course Description

Students will learn about storage technologies, including Disks, SSDs, DAS, NAS, and SAN, as well as computer networking (layers, protocols, interfaces, TCP/IP, routers, switches, vLANs, load balancers, firewalls, VPNs, encryption).

Lectures are augmented by hands-on exercises and a group project.

Course Learning Outcomes (CLO)

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

- CLO 1: Understand the principles, technologies, and infrastructures of computer storage and networking
- CLO 2: Understand leading storage and networking technologies and products
- CLO 3: Perform hands-on experiments using desktop based simulators and tools
- CLO 4: In a project, build a sophisticated NAS solution from open source software components, document and present the project.

Required Textbook

Textbook

No required textbook. Course materials will be posted on the Canvas website.

Other Readings

A list of suggested other readings will be provided in class.

Other Technology Requirements / Equipment / Materials Requirements

Students must use their personal laptop for exercises in class. It should be a modern computer with at least 4 GB of memory and either Windows, or OS X, or Linux installed. Accommodations can be made for students who don't have a laptop.

Course Requirements and Assignments

The course material is conveyed through the lectures, typically supported by lecture slides published in Canvas after each lesson. Students are expected to normally attend all classes. If a class is missed it is the student's responsibility to learn the material from other sources, typically from fellow students who attended the class and the lecture slides. The lecture slides are not intended to be self-explanatory, they are merely instructional aides. There is no single textbook covering the course. Assignments such as homework and the project report must be uploaded to Canvas by the published deadline.

Final Examination or Evaluation

There will be a final written exam at the end of the course, as scheduled and published in Canvas. There will also be a mid-term exam which is similar in format to the final exam.

The tests will be administered on paper or electronically through Canvas, SJSU's learning system. Physical presence is mandatory.

Major exams such as midterms and final exams in this class may be recorded. Note that the videos or images taken during the exams will only be viewed if there is an issue to be addressed. Under no circumstances will the images be publicly released.

Grading Policy

Assignments, such as homework, are normally graded as outlined below. For homework, the focus is on correctness of the answer, form is secondary, but sloppy answers will be downgraded. For the project report, form as well as content determine the grade. For the project presentation, the quality of the verbal communication as well as content determine the grade.

Determination of Grades

- Grades for individual assignment and exams are based on the individual work produced and are typically expressed as a percentage of the ideal answer.
- Grades for group assignments are awarded per group, based on the group's performance, i.e. each member of the group receives the same grade, expressed in %.
- Extra credit options are not normally available
- Missed assignments will be graded as 0%
- Each assignment has a specific deadline as published in Canvas. Late work will not be accepted.
- The final grade is a letter Grade "A" through "F" where "A" is the best grade. Grades may further be suffixed with "+" (better than) or "-" (worse), e.g. "B+"
- Components of the final grade are weighed as follows
 - 25% Homework assignments
 - 25% Project reports, reviews, and presentations
 - 20% Midterm Exam
 - 30% Final Exam

Classroom Protocol

Each student is required to participate in class activities, engage in a project team, participate in project reviews, submit assignments and reports on time, and take exams and tests. Classes start on time, there may be spot quizzes at the beginning of any class. Being late for class is strongly discouraged.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

**CMPE 284 Storage and Network Virtualization,
Fall 2017, Course Schedule**

Date (Tuesday)	Topic
8/29/2017	Physical Disks, Storage Partitions and Volumes, VirtualBox (Tool)
9/5/2017	Redundant Array of Independent Disks (RAID)
9/12/2017	Striping, Storage Performance
9/19/2017	Logical Volume Management and Snapshots, Storage Area Networks (SAN)
9/26/2017	File Systems, Network Attached Storage (NAS), Cloud Storage
10/3/2017	Filer Simulator
10/10/2017	Storage Lab
10/17/2017	Midterm exam
10/24/2017	Network Layers, Internet, TCP/IP, Applications, Content Delivery Networks, BigData
10/31/2017	Transport, Network, Link, Physical, Streaming content via the Internet
11/7/2017	Routers, Switches, vLANs, Load Balancers, Firewalls, VPNs, Encryption
11/14/2017	Software Defined Networks, OpenFlow, Mininet
11/21/2017	Thanksgiving week
11/28/2017	WireShark Lab: HTML, DNS, ARP
12/5/2017	Project Presentation
12/12/2017	Final exam

Homework assignments given in one class are due by the next class, unless otherwise instructed.

Project materials (report, presentation), are due by the Project Review date.

The schedule is subject to change with fair notice.