San José State University
College of Engineering
Graduate and Extended Studies
CMPE-172 / SE-172 Enterprise Software Platforms, Section 02,

Fall, 2018

Course and Contact Information

Instructor:	Andrew H. Bond
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Office Hours:	Tue/Thu 10:15 - 11:00 AM, PST
Class Days/Time:	Tue/Thu 7:30 AM – 08:45 AM, PST
Classroom:	Engineering Building 325
Prerequisites:	Classified undergraduate standing or advisor consent
Canvas Website:	https://sjsu.instructure.com/courses/1263470

Canvas Format and Canvas Learning Management System

This course will be taught primarily face-to-face instruction. 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 for your email at http://my.sjsu.edu (or other communication system as indicated by the instructor) to learn of any updates.

Course Description

Enterprise software, system and virtualized platforms. Covers OSs, NOS, security, databases (OLTP, Big Data, Analytics), transactions, groupware, components, web services, Containerized microservices, Lambda functions, web systems management, DevOps and development methodoliges.
Covers standards and emerging technologies

Course Goals

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

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

Course Learning Objectives (CLO)

	Description
CLO 1	Ability to identify and evaluate enterprise software technologies and use them to build a flexible, scalable, cost effective and secure software platform
CLO 2	Ability to understand and operate enterprise software, software development, platforms, lifecycle tools and methodoligies
CLO 3	Ability to understand standards for enterprise class software, network, and security technologies
CLO 4	Ability to design and build a software platform and system architecture solution using available technologies given a business problem
CLO 5	Ability to analyze software technologies, standards, and architectures then communicate the outcome of the analysis

Course Learning Objectives Support Program Outcomes

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

Required Textbook

Textbook

Required Texts *(Online / Safari Editions are OK)*

- Patterns of Enterprise Application Architecture Author: Martin Fowler
- Building Microservices Author: Sam Newman

Recommended Texts

- The Pragmatic Programmer: From Journeyman to Master Authors: Andrew Hunt, David Thomas
- Enterprise Integration Patterns: Designing, Building, and Deploying Messaging Solutions Authors: Gregor Hohpe, Bobby Woolf
- Next Generation SOA: A Concise Introduction to Service Technology & Service-Orientation Author: Thomas Erl
- http://martinfowler.com/
- http://www.oreilly.com/design/free/files/designing-for-the-internet-of-things.pdf

Course Requirements and Assignments

This course is designed to introduce students into the environment of the modern Enterprise from a software engineering and development perspective. We'll look at:

- How modern enterprises are organized and operated
- How the IT infrastructure in enterprise datacenters is designed built and operated
- How modern micro-services based web applications are designed built and operated
- The required texts and references will provide a foundation for the topics covered in enterprise design principles and patterns
- There will be assignments and readings from the required reading list. Online/Safari versions of those texts are acceptable

Assignments

- Students must form into team of 2-5 students, and must elect a team leader and choose a unique team name
- All homework and projects are submitted only by the team leader and graded as a team assignment
- All team final project deliverables for each team are due at the start of class the day of the final project presentations

Final Examination

All of the course material will be subject to a final examination. There is an interim mid-term for students to assess their understanding worth 10%, but the final exam will cover all of the topics covered during the semester and is worth 25% of the final grade.

Assignments and Grading Policy

- Exams are a combination of multiple choice and short answer, "closed book".
- Students will form into groups of 2-4 for homework and term project assignments, which are submitted as group assignments
- The Term project (worth 33% of final grade) will consist of:
    - Project Report – (Word format) (10%)
    - Project Presentation – (PowerPoint format) (8%)
    - Project Code – (GitHub submission) (15%)

Determination of Grades

- Grades are determined from a combination of homework assignments, exams and a term project. The weighting of assignments is show in the table below
- Grades will be assigned on a curve
- No Extra Credit

Grade Weighting

8 Homework Assignments (4% each)	32%
1 Term project	33%
1 Midterm	10%
1 Final	25%

Grading Rules:

100%	A+
94-99%	A
90-93%	A-
87-89%	B+
84-86%	B
80-83%	B-
77-79%	C+
74-76%	C
70-73%	C-

Classroom Protocol

Students are expected to attend class on-time and in-person.
Please refrain from using mobile devices in class (except for taking notes, or otherwise participating in class)

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 at http://www.sjsu.edu/gup/syllabusinfo/"

CMPE 172: Enterprise Software Platforms, Fall 2018, Section 01, Course Schedule

The schedule is subject to change with fair notice. Notification of schedule changes will be made via the class Canvas portal.

Week	Date	Topics, Assignments, Deadlines
1	8/21, 8/23	Introduction and Overview , Operating Systems, Administration, and Automation Tools (Puppet/Chef/Ansible, Vagrant)
3	8/28, 8/30	Networking, Software Defined Networking (SDN), ACI, Container Networking (Contiv)
4	9/4, 9/6	Modern Application Frameworks (Karaf, Kubernetes, Mesos, Spark)
5	9/11, 9/13	Groupware/Enterprise Software (ERP, SCM, CRM) and Platforms
6	9/18, 9/20	Business Processes, Modeling, and Service Composition
7	9/25	Software Development Models and Lifecycles
7	9/27	**Midterm exam**
8	10/2, 10/4	Mid-term review and Project Abstract Presentations
9	10/9, 10/11	Datastores, Databases and Query Languages

Week	Date	Topics, Assignments, Deadlines
11	10/16, 10/18	Enterprise Messaging and Transactions
12	10/23, 10/25	Enterprise Microservices Architectures
13	10/30, 11/1	Business Intelligence (BI) and Enterprise Management Tools
14	11/6, 11/8	Enterprise Security
15	11/13, 11/15	Enterprise Standards
	11/20	Enterprise Case Study
-	11/22	**Thanksgiving Holidays - Campus Closed**
	11/27, 11/29 12/4, 12/6	**Project Presentation**
	12/11	**Final Exam Review**
	12/13	**Final Exam**: Thursday, December 13, 0715AM – 0930AM as per: FINAL EXAM SCHEDULE

The schedule is subject to change with fair notice.