**CSEN 317**: Distributed Systems Syllabus

**Fall 2024**

Department of Computer Science and Engineering

Santa Clara University

**1. General Info**

Instructor: Dr. Xiao Li

Office: TBD

**2. Course Description**

CSEN 317 is a m

**3. Prerequisites**

CSEN 233 (Computer Networks) and CSEN 283 (Operating Systems) or equivalent

**4. Required Textbook**

**Book 1**: “Distributed Systems, Concepts and Design”, George Coulouris, Jean Dollimore, Tim Kindberg and Gordon Blair

Fifth Edition, published by Addison Wesley, May 2011

ISBN 0-13-214301-1, Book homepage: [*https://www.cdk5.net/wp/*](https://www.cdk5.net/wp/)

**Book 2**: “DISTRIBUTED SYSTEMS”, Maarten van Steen Andrew S. Tanenbaum

Fourth edition Version 4.02

ISBN 978-90-815406-4-3, Book homepage: [*https://www.distributed-systems.net/index.php/books/ds4/*](https://www.distributed-systems.net/index.php/books/ds4/)

**5. Course objectives**

1. To learn advanced and cutting-edge state-of-the-art knowledge and implementation in operating systems and distributed systems.
2. To read and understand research publications in the technical area of operating systems and distributed systems, beyond that of the traditional textbook level.
3. To conduct group project and to equip for scholarly research in operating systems and distributed systems.
4. To explore the next generation of operating systems and distributed systems, models, tools, etc. and other advanced topics if time permits.

**6. Expected Learning Outcome**

1. Demonstrate the knowledge of operating systems and distributed systems (including processes and threads, virtual memory and paging, inter-process communication, network transparency, data consistency and replication, distributed transaction and concurrency control, fault tolerant, high availability and reliability, distributed systems synchronization, distributed file systems, message queues, event-based systems, etc.) by answering exam questions correctly.
2. Demonstrate the ability to build example thread programming and distributed system applications (using open source cloud computing tools/systems) by implementing programming assignments correctly.
3. Demonstrate the ability to read current research papers and implement example research group project in operating systems and distributed systems by doing term project and showing reasonable contributions in this field.