

CSC 7260 – Distributed Systems

Instructor: Rhongho Jang

Location: 2120 State Hall

Time: TT 1:00 PM~ 2:15 PM (Winter Only)

Office Hours: TT 2:30 PM~3:30 PM

Course Description

Both basic distributed computing ideas and system designs that support distributed applications will be covered in this course. The following learning outcomes are part of the course: a thorough understanding of the fundamentals of distributed computing, construction of distributed system components, and comprehension of the current state of the art in various areas of distributed systems. This includes studying abstract concepts and practical methods for creating system support for distributed applications.

Course Objectives

Upon successful completion, you will:

- understand the core concepts in distributed systems, like logical clocks, consistent cuts, consensus, replication, and fault tolerance,
- Learn the standard techniques to implement them to build correct and performant distributed systems and applications.
- Be familiar with multiple practical distributed systems that underpin popular real-world distributed applications and services
- Know how such systems are realized by relying on core distributed computing concepts.

Prerequisites

- [CSC 5250](#) with a minimum grade of C or waived by the instructor

Books

Distributed Systems, M. van Steen and A.S. Tanenbaum, 3rd Edition

Topics

Introduction: definitions, design goals, and types
Architectures: styles, middleware, system, etc.
Processes: threads, virtualization, clients, servers, etc.
Communication: foundation, remote call, message-oriented communication, etc.
Naming: flat, structured, and attribute-based naming approaches
Coordination: clock synchronization, clock, election algorithm, etc.
Consistency and replication: client-centric consistency models and replica management

Fault tolerance: process resilience, reliable communication, recovery

Security: secure channel, access control, secure naming

Grading (tentative)

Attendance 10%

Mid-term exam 35%

Reading and Presentation: 20%

Final exam 35%

Scale

A	90-100%	C	70 - 73%
A-	87-89%	C-	67 - 69%
B+	84 - 86%	D+	64 - 66%
B	80 - 83%	D	60 - 63%
B-	77 - 79%	D-	57 - 59%
C+	74 - 76%	F	0 - 56%

Academic Dishonesty: Plagiarism and Cheating

All forms of academic misbehavior are prohibited at Wayne State University. Refer to the [Student Code of Conduct](#).

Student Disability Services

If you have a documented disability that requires accommodations, you should register with Student Disability Services (SDS) for coordinating your academic accommodations.

Link: <https://studentdisability.wayne.edu/>

Phone: (313) 577-1851 | Videophone: (313) 202-4216 | Fax: (313) 577-4898

Other Issues

Should you have any questions or issues, please contact the instructor in advance.