
CSE 452 Introduction to Distributed Systems

Credits

4.0 (3 hrs lecture, 1 hr section)

Lead Instructor

Arvind Krishnamurthy

Textbook

None

Course Description

Covers abstractions and implementation techniques in the construction of distributed systems, including cloud computing, distributed storage systems, and distributed caches.

Prerequisites

CSE 332 and 333, 451 recommended

CE Major Status

Selected Elective

Course Objectives

Give students a working knowledge of the principles, design issues, and algorithms underlying distributed systems. Build programming experience through a sequence of targeted distributed system projects.

ABET Outcomes

- (1) an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- (2) an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, , and economic factors
- (5) an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- (6) an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Course Topics

Client server computing, the web, cloud computing, peer-to-peer systems, and distributed storage systems.

Remote procedure call, preventing and finding errors in distributed programs, maintaining consistency of distributed state, fault tolerance, high availability, distributed lookup, and distributed security.