Computing Science Course Outlines 2020 Spring

CMPT 474 - D100 Web Systems Architecture

Instructor(s): Ouldooz Baghban Karimi

SFU Surrey

Calendar Objective/Description:

Web service based systems are fundamentally different from traditional software systems. The conceptual and methodological differences between a standard software development process and the development of a web service based information system. The technology involved during the construction of their own web service based application in an extensive project.

Instructor's Objectives:

Building systems for developing applications that run on a cloud is the main topic of discussion in this course, including definitions, enablers, opportunities, challenges, and practices in web(cloud)-based systems architecture.

Readings include research papers and industry articles. The course includes a number of practical projects and hands-on experience.

Learning about Azure, AWS, Google Cloud, Kubernetes, OpenStack, and building cloud-based systems is a part of this course.

Prerequisites:

CMPT 371.

Topics:

- Web(Cloud)-based Systems: Definitions, Opportunities, and Challenges
- Scalability, Virtualization, and Resource Elasticity
- Service-based, and Micro-Services Architectures
- Service Management & Orchestration
- Meeting User Expectations: Availability, Consistency, Reliability, and Fault Tolerance
- Meeting User Expectations: Performance Requirements and Tradeoffs
- Privacy and Security
- Service Delivery, Measurement, and Pricing
- Tools, Platforms, and Experiments

Grading:

Labs and Quizzes (20%), Assignments and Projects (40%), Midterm and Final (40%)

Students must attain an overall passing grade on the weighted average of exams in the course in order to obtain a clear pass (C- or better).

Academic Honesty Statement:

Academic honesty plays a key role in our efforts to maintain a high standard of academic excellence and integrity. Students are advised that ALL acts of intellectual dishonesty will be handled in accordance with the SFU Academic Honesty and Student Conduct Policies ( http://www.sfu.ca/policies/gazette/student.html ).