

## Software Engineering

Course # COMP 3052

Credits 6

**Pre-requisites and Co-requisites:** Object-Oriented Programming, Web Technologies

### Course Description

The Software Engineering course provides a broad overview of software engineering concepts such as software development process, requirement engineering, quantum and cloud computing, high-performance computing, and the application of software engineering tools. The course prepares students to identify socio-economic problems in the real world and develop practical and sustainable solutions. Students are encouraged to design, implement, and evaluate small-scale software projects in teams of up to 3 people. Mobile application development with imperative and declarative paradigms using Kotlin programming language and Jetpack Compose Android toolkit are employed to illustrate software engineering concepts too. After completion of this course, students have the skills and project-based experience needed for entry into software developer careers.

### Course Learning Outcomes

Upon the completion of the course, students will be able to:

- Identify, formulate, and solve software engineering problems, including the specification, design, implementation, and testing of software systems that meet specification, performance, maintenance, and quality requirements
- Work as a team member participating in the design, development, deployment, and maintenance of small and medium scale soft-/hardware projects
- Evaluate the professional, ethical, and social impact of potential solutions to software engineering problems in a global society, drawing on knowledge of contemporary issues and emerging software engineering trends, models, tools, and techniques
- Apply imperative and declarative programming paradigms using Kotlin and Jetpack Compose to Android apps
- Speedup application with multithreading, UMA, and NORMA computational parallel architectures

### Course Assessments and Grading

Item	Weight, %
Problem-solving sessions	35%
Quizzes	28%
Midterm exam	17%
Final exam	20%