CMPT 305 - E100 Computer Simulation/Modelling

Instructor(s): Alaa Alameldeen

Calendar Objective/Description:
Computer Simulation/Modelling

Instructor's Objectives:
This course is an introduction to the modelling and computer simulation of complex systems. The course includes both the theory and practice of model design, analysis, and simulation. The course focuses on the modelling and performance evaluation of computer systems and networks. Quizzes will cover the theory. In homework programming assignments and projects, students will model and simulate aspects of computer systems and networks.

Prerequisites:
see go.sfu.ca

Topics:
- Basic Concepts of Simulation, Modelling, and Performance Evaluation
- Analytic Modelling: Queueing theory, fundamental laws, single/multiple server queues
- Discrete Event Simulation: Event scheduling, random number and random variate generation
- Simulation Model and Output Analysis
- Experimental Design: Factorial designs, linear regression
- Queueing Network Models
- Computer System Simulation: System components, performance metrics, simulator design

Grading:
Quizzes 30%, Homework programming assignments 30%, Projects 40% (tentative)

Required Books:

Reference Books:

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).