

STA 3180 Statistical Modelling: Simulation

Topic Outline: Simulation

I. Introduction to Simulation

A. Definition of Simulation

B. Types of Simulation

C. Benefits of Simulation

II. Monte Carlo Simulation

A. Overview of Monte Carlo Simulation

B. Steps in Monte Carlo Simulation

C. Applications of Monte Carlo Simulation

III. Discrete Event Simulation

A. Overview of Discrete Event Simulation

B. Steps in Discrete Event Simulation

C. Applications of Discrete Event Simulation

IV. System Dynamics Simulation

A. Overview of System Dynamics Simulation

B. Steps in System Dynamics Simulation

C. Applications of System Dynamics Simulation

Main Things to Study:

- Understand the definition of simulation and the different types of simulation
- Understand the steps involved in Monte Carlo, Discrete Event, and System Dynamics simulations
- Understand the benefits of simulation and the applications of each type of simulation

Problem Solving Strategies:

- Break down complex problems into smaller, more manageable parts
- Identify the key elements of the problem and use them to develop a solution
- Use diagrams and visual aids to help explain the problem and its solution

- Utilize trial and error to find the best solution
- Think critically and logically to identify potential solutions
- Research and consult with experts to gain additional insight into the problem