

OFFICIAL SYLLABUS
OR 585 – ADVANCED SIMULATION MODELING

Adopted – Spring 2014
(Committee: Drs. S. Chew, E. Sewell)

Catalog Description

Simulation modeling using a high-level simulation programming language: clock mechanisms, data structures, output analysis, sample applications in queuing and production. Prerequisites: Stat 380 or Stat 480b with a grade of C or better

Textbook

Simulation with Arena, 5th edition, by Kelton, Sadowski, and Swets. ISBN: 978-0073376288

Course Outline and Topics

Chapter 3: A Guided Tour through Arena

Chapter 4: Modeling Basic Operations and Inputs

Chapter 5: Modeling Detailed Operations

Chapter 6: Statistical Analysis of Output from Terminating Simulations

Chapter 7: Intermediate Modeling and Steady-State Statistical Analysis

Chapter 8: Entity Transfer

Chapter 9: A Sampler of Further Modeling Issues and Techniques

Chapter 11: Continuous and Combined Discrete/Continuous Model

Course Objectives

At the conclusion of this course, students should be able to:

- (1) Understand the basics of computer simulation (what simulation is, how simulation works, types of simulation, when and how to use simulation, etc.)
- (2) Model and program simulations using high-level simulation software (ARENA, AutoMod, ProModel) for manufacturing, production, service, and inventory systems.
- (3) Study input data to simulation, and interpret output data from simulation.
- (4) Model and program simulations for continuous and combined discrete/continuous systems.

Any instructor should cover all of the material specified, additional sections are optional.