Course Name	Data Modeling and Simulation	Course Code	252 COMP - 3		
Credit Hours	3	Contact Hours	Theory	Lab	Total
			2	2	4
Offered as	☐ University Requirement ☒ College Requirement ☐ Program Requirement		☒ Required ☐ Elective		
Offered in	☒ BS - Computer Science ☒ BS – Information Systems ☐ BS - Computer & Network Engineering				
Level	5th Level	Prerequisite	NIL		

Course Description:

This course provides an overview of models and simulations and of modeling and simulation techniques. Techniques include time-driven, event-driven dynamic models/simulations and Monte Carlo Simulation. Classification of models: discrete or continuous, stochastic or deterministic, static or dynamic. The course also provide thorough understanding of random number generation, Queuing models, Simulation of queuing systems, inventory systems input modeling and verification & validation of simulation models.

Course objectives:

The course objectives are as follows:

- Discuss the fundamental concepts of modeling and simulation
- Demonstrate the simulation model language.
- Explain methods to build Simulation models.
- Compare and contrast methods for random number generation.
- Design, code, test, and debug simulation programs.
- Simulate the systems based on the queueing theory.

Grading						
	☒ Exam 1	10%	☒ Exam 2	10%	☒ Assignment(s)	10%
	☒ Final	40%	☒ Lab	20%	☒ Mini Project	10%

Text Book:

Discrete-Event System Simulation, Jerry Banks, John S. Carson II, Barry L. Nelson, David M. Nicol, 5th Edition, Pearson Education, 2010, ISBN-13: 978-0136062127

Reference Book:

Simulation modeling Handbook: A practical approach, Chris chung and Christopher A. chung, 2nd Edition, CRC Press, 2003, ISBN-13: 978-0849312410International publication.