

**Course Title** - Computer System Modeling and Simulation

**Course Code** – ECEG 6507

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**Course objectives**

The course aims to introduce the students to the principles and application of modeling and simulation in the context of the art of computer systems: performance, analysis, techniques of simulation modeling

**Course contents**

Chapter One: Introduction

- Simulation models
- Steps in simulation study
- Application areas

Chapter Two: Discrete event modeling

- Event scheduling
- Process interaction
- Activity scanning
- Three phase approach

Chapter Three: Random number generation

- Random number generators
- Seed selection
- Test for random numbers

Chapter Four: Random variable generators

- Inverse transform technique
- Convolution method
- Accept and reject

Chapter Five: Queueing models

- Queueing theory
- Queueing systems

## Chapter Six: Simulation output analysis

- Measure of performance
- Output analysis

## Chapter Seven: Simulation output analysis

- Model verification
- Model validation and calibration

## Text book

1. Banks, J., 2005. *Discrete event system simulation*. Pearson education India.