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| **Simulation -1** | **Module Title:** |
| **OPER 241** | **Module ID:** |
| **STAT 111** | **Prerequisite:** |
| **7** | **Level:** |
| **3 (3+0+1)** | **Credit Hours:** |

**Module Description:**

This course provides fundamental and practical concepts of computer simulation and modelling techniques and its role in engineering management problem solving. It covers such topics as models, model building and applications of simulation in many fields.

**Module Aims:**

This course provides fundamental and practical concepts of computer simulation and modelling techniques

**Learning Outcomes:**

At the end of this course, a student will be able to:

* Understand fundamental concepts of computer simulation and its role in engineering problem solving.
* Understand model-engineering problems.
* Appreciate the advantages of using simulation and modelling for taking decision in engineering problems.
* Understand fundamental concepts of discrete-event simulation
* List many software simulations.

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| List of Topics | No. of  Weeks | Contact Hours |
| Chapter 1 : Introduction to simulation | 3 | 9 |
| Chapter 2 : History of simulation | 2 | 6 |
| Chapter 3 : Basic simulation modeling | 3 | 9 |
| Chapter 4 : Discrete-event simulation | 3 | 9 |
| Chapter 5 : Software Simulation | 3 | 3 |

**Textbook:**

Simulation, Sheldon M.Ross, 5th Edition, Hardcover,2012 .