CS307: Modelling and Simulation	L	T	P	Nil
	3	1	0	

Course Objective: To introduce different types of Simulation models, discrete event simulation modeling with example, uses of different simulation modeling software like GPSS, SIMSCRIPT, SLAM, GASP, and SIMULA and different evaluation methods for the simulation software output.

S. No.	Course Outcomes (CO)
CO1	To understand and classify various simulation modelling techniques.[Understanding].
CO2	To outline steps in a simulation study and illustrate Discrete event simulation.[Understanding]
CO3	To construct a model for complex systems and experiment with simulation language. [Applying]
CO4	To analyze random numbers generation using different statistical techniques.[Analysing]
CO5	To evaluate simulation output and validate the system.[Evaluating]

S. No	Contents	Contact Hours
UNIT 1	Definition of System, types of system: continuous and discrete, modelling process and definition of a model.The nature of simulation: simulation model - static, dynamic, deterministic stochastic continuous, discrete models.	12
UNIT 2	Discrete event simulation: Time Advance Mechanism, Components and Organization of a Discrete Event Simulation Model, Selected Illustrative Examples of Simulation Application Models.	12
UNIT 3	Simulation software: Modelling of Complex Systems, Use of a Simulation Language such as GPSS, SIMSCRIPT, SLAM, GASP, and SIMULA.	12
UNIT 4	Evaluation of simulation output :Random Variables and their properties Estimation Methods, Goodness of Fit, Confidence Intervals, Variance Reduction Techniques, Validation of Simulation Models.	12
	Total	48