

Semester III

Subject Name: Operations Research	Duration: 5 hrs /Cycle
Subject Code: 3PGM4 (2015 on)	Credit : 5
Unit I: Deterministic Inventory Models: General Inventory Model - Role of Demand in the Development of Inventory Models - Static Economic-Order-Quantity (EOQ) Models - Classic EOQ model - EOQ with Price Breaks - Multi-Item EOQ with Storage Limitation.	
Unit II: Queuing Systems: Why Study Queues? - Elements of a Queuing Model - Role of Exponential Distribution - Pure Birth and Death Models (Relationship between the Exponential and Poisson Distributions) - Pure Birth Model - Pure Death Model - Generalized Poisson Queuing Model.	
Unit III: Queuing Models: Specialized Poisson Queues - Steady-State Measures of Performance - Single-Server Models - Multiple-Server Models.	
Unit IV: Classical Optimization Theory: Unconstrained Problems - Necessary and Sufficient Conditions - The Newton-Raphson Method - Constrained Problems - Equality Constraints - Inequality Constraints.	
Unit V: Nonlinear Programming Algorithms: Unconstrained Algorithms - Direct Search Method - Gradient Method - Constrained Algorithms - Separable Programming - Quadratic Programming - Chance-Constrained Programming - Linear Combinations Method.	

Text Book: Operations Research: An Introduction by Hamdy A. Taha, 6th Edition, PHI (1997).

Chapters: 11(11.1-11.3), 17(17.1-17.5, 17.6(17.6.1-17.6.3)), 20(20.1-20.3), 21(21.1, 21.2(21.2.1-21.2.5)).

Reference Books: 1. Operations Research (Theory and applications) by J. K. Sharma, 3rd Edition, Macmillan India Limited (2007).

2. Resource Management Techniques (Operations Research) by Prof. V. Sundaresen, K.S. Ganapathy Subramanian and K. Ganesan, New Revised Edition 2000, A.R Publications.