

<b>Module Title:</b>	<b>OPERATIONS RESEARCH</b>
<b>Academic year:</b>	2009 – 2010
<b>Credit Value:</b>	5
<b>Pre- requisites:</b>	None
<b>Assessment:</b>	Exam-60%, CA-40%
<b>Aims</b>	To develop the skills required in formulating quantitative models to aid decision-making in project management and supply-chain management. The emphasis is on formulating realistic models to represent decision problems and familiarising the students with the methods for solving these problems. The use of software and tools relevant to the area is covered in the practical sessions. Optimisation, risk analysis and decision analysis are among the approaches used to solve practical problems.
<b>Module Content</b>	<ul style="list-style-type: none"> <li>• Linear Programming</li> <li>• Network Models</li> <li>• Supply Chain Management</li> <li>• Forecasting Techniques</li> <li>• Queuing Theory and Simulation</li> </ul>
<b>Intended Learning Outcomes:</b>	<p>On completion of the module the student will be able to:</p> <ul style="list-style-type: none"> <li>• Formulate linear programming problems, and solve them by the Simplex and Branch-Bound algorithms.</li> <li>• Use network diagrams to determine optimal scheduling of project activities and evaluate network crashing costs</li> <li>• Solve shortest route, minimal spanning tree and maximal flow problems</li> <li>• Identify the components of a supply chain and use forecasting techniques to analyse supply chain decisions.</li> <li>• Calculate operating characteristics of single server and multi-server queues and use simulation to model queue behaviour.</li> </ul>

