B.B.A.LL.B.: Semester-IV	
BBL 401: OPERATION RESEARCH	
Teaching Scheme	**Examination Scheme**
Lectures: 4hrs/Week	Class Test -12 Marks
Tutorials: 1 hr/Week	Teachers Assessment – 6 Marks
Credits: 5	Attendance – 12 Marks
	End Semester Exam – 70 marks

Course Outcomes:

CO1	To explain the basic use of quantitative techniques in the management of business, industrial and organizational operations and projects.
CO 2	To identify appropriate linear programming techniques for decision making problem and interpret the results obtained.
CO 3	To formulate and solve decision making problems as networks and graphs.
CO4	To set up decision models and use some solution methods for linear programming problems
CO5	Understand variety of optimization problems such as transportation problem, project management, game theory, replacement of items that fails suddenly and sequencing of jobs in such a way so that they should give the best sequence for a set of activities
CO6	Provide hands-on training to the students in the form of an Industrial Project, to address some significant operational issue faced by the company..

Course Content –

Unit-1
Nature, Definition & characteristics of operations research, Methodology of OR, Models in OR; OR & managerial Decision making, OR techniques.

Unit-2
Linear programming: Introduction, Advantages of Linear Programming, Applications areas of Linear Programming. LPP-problem formulation, Graphic Method

Unit-3
Transportation-North West Corner Rule, matrix Minima & VAM Methods, Degenerating.

Unit-4
Game Theory: Two Person Zero Sum Games, Pure & Mixed Strategies, The Maximin & Minimax Principle, Solution of Games using Arithmetic & Graphical Methods

Unit-5
PERT & CPM-Introduction, Network Analysis, Time Estimates in Network Analysis, Critical Path Method; Programme Evaluation & Review Technique.(only basic no crashing).

Unit-6
Replacement Problems: Replacement of asset that deteriorates gradually, (only keeping time come constant), Replacement of Equipments that fails suddenly Sequencing Problem: Meaning, Processing n Jobs through two Machines, Johnson's Rule.