

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE

1.	Title of the Course	Operations Research
2.	Course Number	ME4103
3.	Status of the Course	Core
4.	Structure of Credits	2-1-0-3
5.	Offered To	UG
6.	New Course/Modification to	New
7.	To be Offered by	Department of Mechanical Engineering
8.	To take effect from	July 2018
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective: The objective of this course is to introduce the students to the basic topics in operations research like linear programming, transportation problems and assignment problems, and advanced topics on duality and apply them for solving engineering problems. At the end of this course, students will be able to understand and formulate linear programming (LP) problems.	
12.	Course Content: Terminology and formulations, Graphical and algebraic solutions to LP, simplex algorithm: algebraic and tabular forms, Types of LPs, Matrix method, Duality: Writing the dual of an LP, Primal-Dual relationships, Dual: Basic understanding, significance, duality theorems, interpretation, dual simplex algorithm, Transportation and Assignment Problem, Solving LPs using Solver, Sensitivity analysis, Introduction to dynamic programming involving discrete and continuous variables, Linear and Integer problems, Inventory models.	
13.	Text book(s): 1. Hamdy A T, <i>Operations Research: An Introduction</i> , 9th Edition, Pearson (2010). 2. Srinivasan G, <i>Operations Research: Principles and Applications</i> , 2nd Edition, PHI Learning Private Limited (2010).	
14.	Reference(s): 1. Ravindran, Phillips and Solberg, <i>Operations Research: Principles and Practice</i> , 2nd Edition, Wiley India (2007).	