

1.	Title of the course	Industrial Engineering and Operations Research
2.	Course number	ME319L
3.	Structure of credits (L-T-P-C)	2-1-0-3
4.	New course/modification to	Modified with ME402L/OPERATIONS RESEARCH
5.	To be offered by	Mechanical Engineering
6.	Proposed by	Vishnu C R
7.	Prerequisite	None
8.	<b>Course Objective(s):</b> To explain the scope of industrial engineering in designing and managing production systems. To formulate, solve and interpret optimization problems using the techniques of operations research.	
9.	<b>Course Content:</b> Functions of industrial engineering: product and service design, types of production systems, material handling, forecasting, production planning and control, quality management, supply chain management, industry 4.0; Scope of operations research: linear programming problems, mathematical formulation, application problems, graphical and algebraic methods, concept of duality, sensitivity analysis, transportation and assignment problems, integer problems, solving problems using software, introduction to inventory models, queueing theory, replacement theory.	
10.	<b>Textbook(s):</b> 1. Heizer J, Render B, Munson C and Sachan A, Operations Management: Sustainability and Supply Chain Management, 12th Edition, Pearson (2017). 2. Taha H A, Operations Research: An Introduction, 10th Edition, Pearson (2018).	
11.	<b>Reference(s):</b> 1. Chase R B, Shankar R and Jacobs F R, Operations and Supply Chain Management, 15th Edition, McGraw Hills (2018). 2. Srinivasan G, Operations Research: Principles and Applications, 3rd Edition, PHI Learning (2020).	