



Pimpri Chinchwad Education Trust's
Pimpri Chinchwad College of Engineering
Sector No. 26, Pradhikaran,
Nigdi, Pune – 411 044



COURSE OUTLINE

Department: AS&H

A.Y.:2022-23 SEM-II

Date:27th Feb,2023.

Class: S.Y. B. Tech [All programs]

Name of the Course: **Mathematical Optimization [BAS4602]**

Relevance of the course:

Mathematical optimization is an extremely powerful prescriptive analytics technology that enables companies/organizations to solve complex business problems and make better use of available resources and data. Mathematical programming allows you to capture the key features of a complex real-world problem as an optimization model. This course requires basic knowledge of following courses:

- Linear Algebra and Univariate calculus
- Multivariate calculus
- Applied Mathematics

Course Outcomes:

CO No	CO Statement	No. of Lectures Planned	Content Delivery method	Assessment tools Planned
1	Apply basic theoretical principles for formulation and solution of linear programming models.	6	PPT, chalk and board, Quiz, Group Discussion	MTE, ETE
2	Apply variants of Simplex methods and duality to find optimal solutions for constrained and unconstrained problems.	6	PPT, chalk and board, Quiz, Group Discussion	MTE, ETE
3	Understand basic operators, packages, syntax of software to develop programs for Linear Programming Problems.	6	PPT, Videos, Demonstration	IE-1(Task submission)
4	Apply optimization techniques to solve transportation and assignment problems.	6	PPT, chalk and board, Quiz, Group Discussion	MTE, ETE
5	Analyze the project network and nonlinear problems using different methods to optimize models.	6	PPT, chalk and board, Quiz, Group Discussion	MTE, ETE
6	Develop programs for transportation and assignment problems and Nonlinear Programming problems.	6	PPT, Videos, Demonstration	IE2(Task submission), ETE

Internal Evaluation:

Tools	Assessment tools with tentative dates (Quizzes, mini project, research paper based assignment etc.)	Marks	Mapped COs
IE1	Open Ended Activity: Task submission using Software programming on real life applications/problems related linear programming problems [17/04/2023]	10	CO3
IE2	Open Ended Activity: Task submission using Software programming on real life applications/problems related Transportation Problem, Assignment Problems, Network Analysis [02/06/2023]	10	CO6



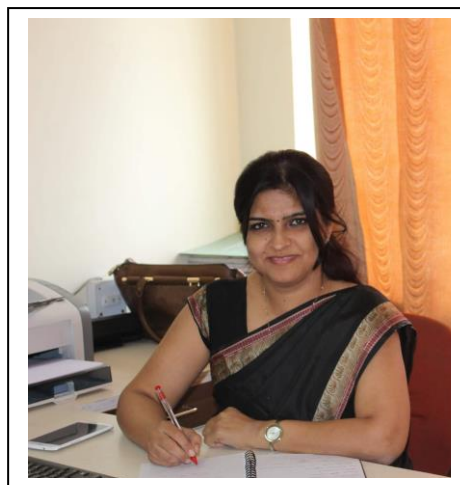
Course Faculty SY OE A
Mrs. Sujata Bhamre
Email: sujata.bhamre@pccoepune.org



Course Faculty SY OE B, C
Dr. Neha Sharma
Email: neha.sharma@pccoepune.org



**Course Faculty SY OE D and
Course Coordinator**
Mrs. Ashwini Vaze
Email: ashwini.vaze@pccoepune.org



**Module Coordinator
[Mathematics]**
Dr. Leena Sharma
Email: leena.sharma@pccoepune.org