



Module PMRF-ISSS009/2023

Operations Research: Optimization with Linear and Integer Programming

Name of the PMRF student

Shubham Keshri

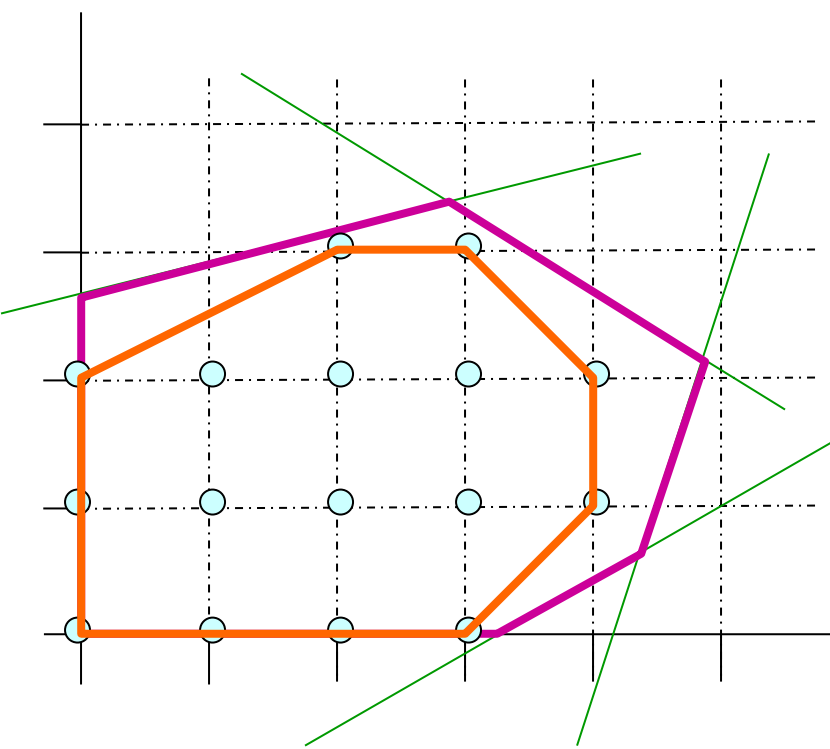
Required background of the students taught

Bachelors, Masters and Ph.D. students enrolled in any branch of Engineering, Management or Economics.

Prerequisites: Basic linear algebra

Online session coordinator

Will be chosen from the list of registrants



Schedule of the module

Start date: 01/07/2023

End date: 07/09/2023

Timings: Thursday and Saturday, 3 – 4:30 PM.
(3 hrs/week)

Last date of registration: 26/06/2023

Details of the content of the module

This course introduces the principles of operations research, with an emphasis on model building and algorithm development.

Topics include:

- Introduction to Operations Research
- Linear Programming (LP): LP formulations; Graphical method; Simplex algorithm – theory and method; Sensitivity analysis; Duality theory.
- Integer Linear Programming: Transportation problem; Assignment problem; Formulations using integer variables; Branch & bound technique.
- Multi-Objective Optimization Problems (MOOP): Principles of MOOPs, Dominance and Pareto-Optimality, Weighted Sum Method, ϵ -Constraint Method.
- Network Models: Basics of graph theory; Modelling using network; Shortest path problem; Maximal flow problem; Minimum-cost flow problem.

Meeting link : Will be shared later

Contact email ID: issf.forum@gmail.com

Registration link:

<https://forms.gle/k7vPLX52EVRxF6qJ9>