

About The Course

IE684, IEOR Lab

January 5, 2022

Course website	Moodle https://moodle.iitb.ac.in
Platform for online lectures, discussions	MS Teams
Class Hours	Wednesdays, 02:00-05:00 PM
Teaching Assistants	Anand Kumar, 20i190011@iitb.ac.in Pranav Vinod Machingal, 204190002@iitb.ac.in Shubham, 19i190009@iitb.ac.in Konge Utkarsh Vasudev, 203190013@iitb.ac.in Abhishek Narayan Chaudhury, 19i190005@iitb.ac.in Neeraj Kumar Bhargava, 19i190004@iitb.ac.in
Instructors	P. Balamurugan, balamurugan.palaniappan@iitb.ac.in N. Hemachandra, nh@iitb.ac.in

Objectives

Learn how to implement algorithms relevant to IEOR and analyze their performance by experimentation.

Main Topics To Be Covered

Implementation of algorithms used in linear, nonlinear, stochastic and discrete optimization. Implementation of machine learning algorithms used for classification, regression and clustering applications. Implementation of algorithms useful in deep learning. Simulations including Markov-chain Monte Carlo (MCMC) simulation, simulation for queueing models. Modeling real-life problems, collecting data, processing data etc.

Lab exercises

One lab will be held every week. An assignment will be given on the day of the lab. The students will be expected to finish the assignment on that day itself (or within the announced deadline). All programs, data and output files must be uploaded to Moodle. There will be a penalty for late submissions. Instructors may ask questions about the previous labs while grading the submissions.

Students are encouraged to interact with each other and discuss the problems. **However, copying answers, code, data etc is strictly prohibited.** You must write your own code without looking at other students' code. Please do not share your work with other students.

Lab requirements

All the lab exercises are based on Python programming language. Intermediate level of expertise in Python is expected from the students registered in the course. Most of the lab exercises will be hosted in Google Colaboratory Platform (<https://colab.research.google.com/>) as interactive Python notebooks (.ipynb files). Please keep a backup of all your lab-work (usually, all Google colab notebooks will be stored in your Google Drive), as it will be a useful reference in the future and also guard you against failure of your computer or server.

Grading

The following is the breakup of the final score.

$N - 1$ best labs out of N labs	85%
Final Viva	15%

The grade will be based on the 'final score' and the improvement shown by a student over the entire course. Students need not necessarily compete with each other, but must try to do their best.

Audit Requirements

Students auditing the course must obtain 'CC' or better in order to pass.