IE 507 Modeling and Computation Lab (0 1 3 5 credits) **Fall 2009**

Instructors Jayendran Venkateswaran, < jayendran@iitb.ac.in >
K.S. Mallikarjuna Rao <mallik.rao@iitb.ac.in>
Class hours Slot L3, Thu: 2.00pm to 4.55pm
Class room Room 307 or Computation Lab or CARE Lab
Course website [Access via Moodle]

Course Contents Introduction to software tools for modeling and data analysis. Exposure to computational software for optimization. Use of some software tools such as AMPL/ CPLEX/ Spreadsheet Solver/ LINDO/ LINGO/ Neos Solver/ MATLAB for solving and analyzing optimization problems. Building models, representing input data, results, interpretation & sensitivity analysis. Exposure to statistical packages for data analysis. Use of R/ SAS/ SPSS/ Excel-spreadsheet. Summarizing data with descriptive statistics, computing statistics, statistical estimation & tests. Notion of simulation and effect of randomness. Introduction to Monte Carlo simulation.

Prerequisite Basics in optimization and statistics

Lab requirements

- ✓ Every student must maintain a lab file. The file is to be stored at JV's office. The lab file will contain the lab reports.
- ✓ A lab report must be submitted for each lab session before the following Monday, by 12.00 noon.
- ✓ The lab reports are to be in the specified format (template available in the lab website).

Measurement of Outcomes

45%	Lab reports	20%	Midsem Exam/Viva	35%	Final Exam/Viva

NOTE Cheating, copying and plagiarism is not allowed in lab reports, assignments, quizzes, exams etc. Detection of such practices will result in the appropriate penalties as prescribed by the Institute. Please make sure that whatever you submit under your name is your own work.

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