



CE235 January 3:0 Optimization Methods

Instructor

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Teaching Assistant

N/A
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Department: Civil Engineering

Course Time: Tuesday, Thursday 1130-1 PM

Lecture venue: Structural Engineering Laboratory Lecture Hall

Detailed Course Page:

Announcements

CE 235 Optimization Methods

Course will expose students to the concept of optimization and walk them through different Optimization methods,

Brief description of the course

Course takes the student through different methods of classical Optimization (Linear and Nonlinear Programming) and then to advances in non classical methods (Genetic Algorithm, Particle Swarm and Ant Colony Optimization and other Evolutionary Methods(with applications in Engineering.

Prerequisites

Nil

Syllabus

Basic concepts, Kuhn-Tucker conditions, linear and nonlinear programming, treatment of discrete variables, stochastic programming, Genetic algorithm, simulated annealing, Ant Colony and Particle Swarm Optimization, Evolutionary algorithms, Applications to various engineering problems.

Course outcomes

Student will understand how to formulate an engineering optimization problem and thereafter select appropriate tools needed to solve the problem.

Grading policy

50% sessional that includes a couple of tests, seminar and term paper and another 50% for the final exam.

Assignments

Problems are assigned for solving in the class as tutorials at regular intervals to cover lecture sessions covered,

Resources

1.0 Arora, J.S. Introduction to Optimization, McGraw-Hill (Int. edition). 1989.

2.0 Rao, S.S., Optimization: Theory and Applications. Wiley Eastern, 1992

3.0 Current Literature.