COMPUTER AIDED APPLIED SINGLE OBJECTIVE OPTIMIZATION

PROF. PRAKASH KOTECHA
Department of Chemical Engineering
IIT Guwahati

PRE-REQUISITES : Basic Mathematics

INTENDED AUDIENCE : Students, Researchers & Working Professionals

INDUSTRIES APPLICABLE TO : All

COURSE OUTLINE :

Optimization problems are frequently encountered in almost all disciplines of science and engineering. This course will familiarize the audience with both mathematical and computational intelligence algorithms to solve combinatorial optimization problems. The course is designed so as to enable the participants to quickly use state-of-the-art tools to solve optimization problems. A unique feature of this course will be discussion of a realistic case study to thoroughly understand various aspects of optimization.

ABOUT INSTRUCTOR :

Prof. Prakash Kotecha is an Associate Professor in the Department of Chemical Engineering at Indian Institute of Technology Guwahati. He obtained his Bachelor's degree from Pondicherry Engineering College, Masters from Coimbatore Institute of Technology and PhD from IIT Bombay. He works in computational intelligence algorithms and also applies conventional and recently proposed optimization to solve combinatorial optimization problems. Dr. Kotecha has published articles in several journals and renowned conferences.

COURSE PLAN :

Week 1: Introduction

Week 2: Regression

Week 3: Teaching Learning Based Optimization

Week 4: Particle Swarm Optimization

Week 5: Differential Evolution

Week 6: Genetic Algorithm

Week 7: Artificial Bee Colony Optimization

Week 8: Constraint Handling & Result Analysis

Week 9: Linear & Mixed Integer Linear Programming

Week 10: Solution of Case Study with Mathematical & CI Techniques

Week 11: MATLAB Optimization Toolbox

Week 12: GAMS & IBM ILOG Optimization Studio