

CCS4004 Optimization Techniques

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
CCS3002	4	7/8	2	2	0	3

COURSE AIM

- Solve Ordinary differential equations
- Use mathematical models in which one seeks to minimize or maximize an objective function subject to constraints.
- Solve linear programming problems.

COURSE WEEKLY CONTENTS

- 1 Introduction
- 2 Solution of Ordinary differential equations
- 3 Optimization Models in Operations Research
- 4 Linear and Non-linear models
- 5 Simplex Search for Linear Programming
- 6 Duality and Sensitivity in Linear Programming
- 7 Multi-objective Optimization and Goal Programming
- 8 Unconstrained Nonlinear Programming
- 9 Selected Methods for Constrained Nonlinear Programming and Penalty
- 10 Lagrange Multiplier Methods
- 11 Barrier Methods
- 12 Tabular vs. recursive-descent parsers
- 13 Error handling and Run-time Environment
- 14 Code generation
- 15 Code Optimization.

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	←		30	MARKS		→	30
8 to 12	←		20	MARKS		→	20
1 to 15	←		10	MARKS		→	10
16 or 17	40	Final					40

REFERENCES

Textbook Onwubolu G., Babu B., New Optimization Techniques in Engineering, Springer.