

CCS3002 Numerical Methods

COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Laboratory	
EBA2204 & CCS1302	3	6	2	2	0	3

COURSE AIM

- Understand numerical methods and errors of computers.
- Analyze errors and error propagation.
- Compute roots of equations of one variable
- Solve a system of Linear equations.
- Apply numerical differentiation.
- Apply numerical integration.
- Use interpolation.
- Use regression.

COURSE WEEKLY CONTENTS

- 1 Introduction
- 2 Error Analysis
- 3 Solution of Equations in One Variable (Bisection Method) part 1
- 4 Solution of Equations in One Variable (Bisection Method) part 2
- 5 Solution of Equations in One Variable (Secant and Modified Secant Methods) part 1
- 6 Solution of Equations in One Variable (Secant and Modified Secant Methods) part 2
- 7 Solution of Equations in One Variable (Newton Raphson and Fixed Point Methods) part 1
- 8 Solution of Equations in One Variable (Newton Raphson and Fixed Point Methods) part 2
- 9 Numerical Integration part 1
- 10 Numerical Integration part 2
- 11 Numerical Interpolation part 1
- 12 Numerical Interpolation part 2
- 13 Direct Methods for Solving Linear Systems part 1
- 14 Direct Methods for Solving Linear Systems part 2
- 15 In-Direct Methods for Solving Linear Systems

STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	←		3 0	MARKS		→	30
8 to 12	←		2 0	MARKS		→	20
1 to 15	←		1 0	MARKS		→	10
16 or 17	40	Final					40

REFERENCES

Textbook C. Chapra , Numerical Methods for Engineers with Software and Programming Applications, McGraw Hill.