Course: Numerical methods - Online

Course Code: noc19-ma21

Session: 2019-20

Duration: 8 Weeks

Assessment procedures: Weekly Assignment (25%) + proctored certification Exam (75%)

Curriculum of the Course:

Week 01: Introduction to significant digits and errors, Solution of system of linear Equations (direct methods, Iterative methods, Ill-conditioned systems)
Week 02: Roots of Nonlinear Equations (Bisection method, Regula-Falsi method, Newton-Raphson method, Fixed point iteration method, convergence criteria)
Week 03: Eigenvalues and Eigenvectors, Gerschgorin circle theorem, Jacobi method, Power methods
Week 04: Interpolation (Finite difference operators, difference tables, Newton's Forward/ Backward difference)
Week 05: Interpolation (Central difference formula's i.e. Bessel and Stirling's interpolation formulae, Divided differences, Lagrange interpolation and Newton's divided difference interpolation)
Week 06: Numerical Differentiation (Using Forward/ Backward/central difference formula)
Week 07: Integration (Trapezoidal and Simpson's rules for integration)
Week 08: Solution of first order and second order ordinary differential equations (Euler method, Euler modified method, Runge-Kutta methods, Milne PC method)

List of students enrolled

S. No	Name
1	Shekhar Sharma
2	Akshit Panchal
3	Tushar Batra
4	Bhavya Patni
5	Chintan Mangal
6	Skand Gupta
7	Bhagchand Gurjar
8	Tushar Jain
9	Lokesh Meena
10	Yogit Kumar
11	Manas Jain
12	Manas Dodiya
13	Prashu Jain
14	Rajkumar Gangwar
15	Tanu Mehra
16	Tushar Saxena
17	Vikash Saini
18	Yash Gupta
19	Mohammed Younus