Course Code : Math 506

Course Name : Numerical Differential Equations

Textbook : A First Course in the Numerical Analysis of Differential Equations
Cambridge University Press (2nd Edition)
by Arieh Iserles.
ISBN: 9780521734905

Course Outline

Topic	**Sections in Textbook**	**# of Weeks**
Euler's Method and Beyond	1.1 – 1.4	1
Multistep Methods	2.1 – 2.3	1
Polynomial Interpolation, Legendre Polynomials	3.1	1
Orthogonal Polynomials	3.1	1
Numerical Integration	3.1	1
Runge-Kutta Methods	3.2 – 3.4	2
Stiffness	4.1 – 4.4	2
Finite Differences	7.1	1
Poisson Equation	7.2 – 7.3	1
The Diffusion Equation	13.1 – 13.3	1
The Finite Element Method	8.1 – 8.3	2
		$\Sigma = 14$