UNIVERSITY OF CALGARY

FACULTY OF SCIENCE
Department of Mathematics and Statistics

Applied Mathematics 493 Numerical Analysis II

Numerical differentiation, numerical solution of ordinary and partial differential equations.
Course Hours: H(3-1T)
Prerequisite(s): Applied Mathematics 311, 413, and 491 or Computer Science 491.

Syllabus

Topics	**Number of Hours**
Numerical differentiation	3
Numerical Solution of Ordinary Differential Equations:	
• Euler's Method	2
• Multistep Methods	3
• Runge-Kutta Methods	3
• Stiff Equations and Stability	3
• Adaptive Methods	3
Numerical Solution of Partial Differential Equations:	
• Finite Difference Methods: Elliptic equations; Hyperbolic equations; Parabolic equations	10
• Variational Techniques, Galerkin's Method, The Rayleigh-Ritz Method, The Finite Element Method	9
TOTAL HOURS	**36**

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2004:07:27
Prerequisite change 2009:07:01
DH:jml