Department of Mathematics & Statistics
Concordia University

> **MAST 334(MATH 354)**
> Numerical Analysis
> ***Fall 2004***

Instructor: Dr. M. Mei, Office: LB 541-1 (SGW), Phone: 848-2424, Ext. 3236
Email: mei@mathstat.concordia.ca

Office Hours:

Text: *Numerical Analysis*, by R.L. Burden and J.D. Faires, 7th Edition, Brooks/Cole 2001.

Final Grade: 1) 10% Homework + 15% First Midterm + 15% Second Midterm + 60% Final; or

                      2) 100% for the final examination.

Assignments: *The assignments are an important part of the course*. Students are encouraged to use Maple or other such software to do the assignments. Although the Maple programming is not included in the course, some aspects of Maple will be discussed.

No.	Sections	Topics	Pages	Assignments
1	1.1 1.2	Mathematical Preliminaries Computer Arithmetic	p. 15-17 p. 27	2a, 3b, 11, 21 5a, d, h
2	2.1 2.2	The Bisectional Method Fixed-Point Interaction	p. 53 p. 64	12,18 7, 13
3	2.3	The Newton-Raphson	p. 75	6b, f, 8b, f
4	2.4 2.5	Error Analysis for Iterative Methods Accelerating	p. 85 p. 90	1a, 2a 10a
5	3.1	Lagrange Polynomials and Interpolation	p. 119	3c, 7c, 8
6	3.2 3.3	Divided Differences Hermite Interpolation	p. 131 p. 140	2b, 5a 7
7	**Class Test** 3.4	**Class Test 1** (Lec. 1-4) Cubic Splines	 p. 153	 12
8	8.1	Discrete Least Squares	p. 493	4
9	8.2	Continuous Least Squares	p. 506	1e, 2g, 3g, 4g, 5g, 6g
10	8.3	Tchebyshev Polynomials, Economization	p. 516	1c, 3c, 6
11	**Class Test** 4.3	**Class Test 2** (Lec. 5-8) Numerical Quadrature	 p. 195	 1g, 2g, 3g, 4g, 5g, 6g
12	4.4 4.7	Composite Numerical Integration Gaussian Quadrature	p. 204 p. 226	7 1f, 2f, 3f, 4f
13		REVIEW		