

## Math 105B Suggested Syllabus

**Text:** *Numerical Analysis*, R.L. Burden and J.D. Faires

Lecture	Section	Topic
1	3.1	Interpolation and Lagrange Polynomial
2	3.1	Cont.
3	3.2	Data Approximation and Neville's Method
4	3.3	Divided Differences
5	3.3	Cont.
6	3.4	Hermite Interpolation
7	3.4	Cont.
8	3.5	Cubic Spline Interpolation
9	3.5	Cont.
10	4.1	Numerical Differentiation
11	4.1	Cont.
12	4.2	Richardson's Extrapolation
13	4.2	Cont.
14		Review
15		<b>Midterm</b>
16	4.3	Elements of Numerical Integration
17	4.4	Composite Numerical Integration
18	4.5	Romberg Integration
19	4.6	Adaptive Quadrature Methods
20	4.7	Gaussian Quadrature
21	4.7	Cont.
22	8.1	Discrete Least Squares Approximation
23	8.2	Orthogonal Polynomials and Least Squares Approximations
24	8.3	Chebyshev Polynomials and Economization of Power Series
25	8.4	Rational Function Approximations
26	8.5	Trigonometric Polynomial Approximation
27	8.5, 8.6	Cont.
28	8.6	Fast Fourier Transforms
29		Review