

MA 1113— SINGLE VARIABLE CALCULUS I (4-0)
Syllabus

Text: *Calculus (early transcendentals)*, 5th Edition, J. STEWART (Brooks Cole, ISBN 0534393217)

<u>HOURS</u>	<u>TOPIC</u>	<u>SECTION</u>
1-1	Real numbers, Inequalities, Absolute Value, Coordinate Geometry & Lines	Appendix A, B
1-2	Trigonometry, Radian Measure	Appendix D
1-3	Functions and their Representations	1.1-1.3
1-4	Exponential Functions	1.5
2-6	Inverse Functions & Logarithms	1.6
2-8	Limits of Functions, Limit Laws	2.1-2.3
1-9	Continuity	2.5
1-10	Limits at Infinity; Horizontal Asymptotes	2.6
1-11	Tangents, Velocities & Rates of Change	2.7
1-12	Derivatives	2.8
1-13	The Derivative as a Function	2.9
1-14	Derivatives of Polynomials & Exponential Functions	3.1
2-16	Product & Quotient Rules	3.2
1-17	Derivatives of Trigonometric Functions	3.4
1-18	Chain Rule	3.5
1-19	Implicit Differentiation	3.6
1-20	Higher Order Derivatives	3.7
1-21	Derivatives of Logarithmic Functions	3.8
1-22	Hyperbolic Functions	3.9
1-23	Related Rates	3.10
1-24	Linear Approximations & Differentials	3.11
1-25	Maximum & Minimum Values	4.1
1-26	Mean Value Theorem	4.2
1-27	How Derivatives Affect the Shape of Graphs	4.3
2-29	Indeterminate Forms & L'Hospital's Rule	4.4
2-31	Curve Sketching	4.5
2-33	Optimization Problems	4.7
1-34	Newton's Method & Antiderivatives	4.9, 4.10
1-35	Areas & Distances	5.1
1-36	Definite Integrals & Riemann Sums	5.2
1-37	Fundamental Theorem of Calculus	5.3
1-38	Indefinite Integrals & the Total Change Theorem	5.4
1-39	Substitution Rule	5.5
2-41	Integration by Parts	7.1
4-45	Review, Exams, and Holidays	