Math 262 Course Content and Objectives

COURSE CONTENT AND SCOPE - **Lecture:** Outline the topics included in the lecture portion of the course *(Outline reflects course description, all topics covered in class).*	Hours Per Topic	COURSE OBJECTIVES - **Lecture:** Upon successful completion of this course, the student will be able to...*(Use action verbs - see Bloom's Taxonomy for 'action verbs requiring cognitive outcomes.')*
Differentiation and integration of exponential, logarithmic, inverse trigonometric, hyperbolic and inverse hyperbolic functions.	12	Differentiate and integrate exponential, logarithmic, inverse trigonometric, hyperbolic, and inverse hyperbolic functions.
The evaluation of indeterminate forms and l'Hopital's rule.	2	Apply l'Hopital's rule in the evaluation of indeterminate forms.
Integration of transcendental and algebraic functions by standard techniques including integration by parts, trigonometric substitution, partial fraction expansions and the use of tables.	16	Integrate transcendental and algebraic functions by using the standard techniques of integration including integration by parts, trigonometric substitution, partial fraction expansions and tables.
Integral approximations including the midpoint rule, the trapezoidal rule and Simpson's rule.	2	Approximate integrals using the midpoint rule, the trapezoidal rule and Simpson's rule.
Improper integrals.	1	Evaluate improper integrals.
Applications of integration including arc length, area of a surface of revolution, volume, work, moments and centers of mass, hydrostatic pressure and force, economics and biology including growth and decay.	14	Apply the techniques of integration to find arc length, area of a surface of revolution, volume, work, moments, centers of mass, hydrostatic pressure and force, and to solve various problems in economics and biology including growth and decay.
Graphing, differentiating and integrating functions given in parametric or polar forms.	14	Graph, differentiate, and integrate functions given in parametric or polar form.
Topics on sequences including limits, the convergence of a sequence, the Monotonic Sequence Theorem.	5	Determine the convergence or divergence of a sequence using appropriate tests and theorems.
Topics on series including convergence tests, estimates, remainders, comparison tests, alternating series, conditional and absolute convergence.	12	Determine the convergence or divergence of a series by using the standard tests and theorems.
The representation of an analytic function by a Taylor or Maclaurin series, radius and interval of convergence, differentiation and integration of power series, Taylor and Maclaurin polynomials, the binomial series, applications of Taylor polynomials.	10	Represent an analytic function by a Taylor or Maclaurin series, find the radius and interval of convergence of the power series, integrate and differentiate the series, use Taylor and Maclaurin polynomials to approximate functions, use the binomial theorem.
Final examination.	2	Final examination.
Total: Total Lecture Hours In Section I Class Hours:	90 90	