SU DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
SYLLABUS *(Tentative)*
MATH 202 ***Calculus II***

Background: The Calculus ushered in modern science and challenged the vision of poets, theologians and philosophers. It serves as the basis for much of today's science and technology.

Objectives: To better understand the mathematics which is the foundation for modern science, with emphasis on applications, approximations, and the role of proof. To develop higher level thinking skills; in particular, to practice drawing on previous knowledge to approach new problems.

Intended Audience: Students wanting an intermediate Calculus course that prepares them for further study in mathematics, science, and engineering.

Prerequisite: MATH 201 (with a grade of at least C).

Text: "Calculus: Early Transcendentals, by Stewart; 6th edition, Brooks/Cole Publishing, 2008.

Recommended Technology: Maple (computer software available in campus labs).

Topics (not necessarily in this order)	**Approximate No. of Class Hours**
Integration (Chapter 5) Area, Riemann sums and the integral, and the Fundamental Theorem of Calculus.	8
Applications of Integration (Chapters 6 & 8) Length, area, surface area, volume, and a physical application.	7
Integration Techniques (Chapter 7) Integration by parts, inverse trigonometric functions and trigonometric substitutions, partial fractions, numerical integration, and improper integrals.	8
Differential Equations (Chapter 9) Modeling with Differential Equations; direction fields and Euler's Method; growth and decay; separation of variables; and using Maple to sketch direction fields.	8
Infinite Sequences and Series (Sections 11.1 – 11.7) Convergence of sequences and series; formulae for sequences; tests for convergence; estimating and calculating the value of a series; absolute and conditional convergence.	12
Series Representation of Functions (Sections 11.8 – 11.12) Power series; Taylor and Maclaurin polynomials and series; differentiation and integration of power series; and applications.	9
Testing	4
	56

EVALUATION

Homework or quizzes	20-40%
In-class examinations	40-60%
Comprehensive Final Exam	20-40%

Free tutoring is available for this course in the Spring and Fall semesters.

NOTE: ONCE A STUDENT HAS RECEIVED CREDIT, INCLUDING TRANSFER CREDIT, FOR A COURSE, CREDIT MAY NOT BE RECEIVED FOR ANY COURSE WITH MATERIAL THAT IS EQUIVALENT TO IT OR IS A PREREQUISITE FOR IT.

NOTE: If MATH 202 is completed with a grade of C or better, credit without registration can be awarded for MATH 201. To receive such credit, students must make arrangements with the Department Secretary before taking the final exam in MATH 202.

MATH/axr 11/2007