Salisbury University Department of Mathematical Sciences

MATH 202 :   Calculus II
Syllabus (Tentative)

Description: Introduction to integrals, in nite series, applications and techniques of integration. 4 Hours Credit: Meets four hours per week. Meets General Education IVB or IVC.

Prerequisites: C or better in MATH 198 or MATH 201 or equivalent.

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

Objective: 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.

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.

Textbooks: *Calculus: Early Transcendentals*, by Stewart; 9th edition, Brooks/Cole Publishing. Note: Access to WebAssign is also required for the course. New versions of the text from the SU Bookstore are bundled with a license for WebAssign. An individual license for WebAssign is also available for purchase from WebAssign.net.

Technology: Mathematica (computer software available in campus labs and as a free download to current SU students) and WebAssign accessed via the license described above.

Topic	Weeks
Integration (Chapter 5)	2
Area, Riemann sums and the integral, and the Fundamental Theorem of Calculus.	
Applications of Integration (Chapters 6 & 8)	2.5
Length, area, surface area, volume, and a physical application.	
Integration Techniques (Chapter 7)	2
Integration by parts, inverse trigonometric functions and trigonometric substitutions, partial fractions, numerical integration, and improper integrals.	
In nite Sequences and Series (Chapter 11)	3
Convergence of sequences and series; tests for convergence; estimating and calculating the value of a series; absolute and conditional convergence.	
Series Representation of Functions (Sections 11.8 { 11.12)	2.5
Power series; Taylor and Maclaurin polynomials and series; di erentiation and integration of power series; and applications.	
Parametric Curves and Polar Coordinates (Sections 10.2 { 10.4)	1
Integral Calculus on parametric curves, Polar Coordinates, and area and length in Polar Coordinates.	
Testing and optional topics	1
Examples include separation of variables, direction elds, etc.	
Total	**14**

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.

- Clear descriptions of thought processes, evidence of critical thinking, and e ective communication must be demonstrated in written work.

- **Writing Across the Curriculum:** Students will be expected to communicate mathematics and mathematical ideas e ectively in speech and writing. At the University Writing Center, trained consultants are ready to help you at any stage of the writing process. In addition to the important writing instruction that occurs in the classroom and during professors' o ce hours, the Center o ers another site for learning about writing. **All students are encouraged to make use of these important services.**

- **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.