

Schedule: MWF 1:25-2:15 p.m. in ILB 410, and T 11-11:50 a.m. in ILB 345.

Instructor: Prof. Susan Williams • Office: ILB 312 • Phone: 460-6264 extension 2620
E-mail: swilliam@jaguar1.usouthal.edu • www.southalabama.edu/mathstat/personal_pages/williams/

Office hours: MW 2:15–3:15, TR 1:15–3:15, or by appointment.

Course description: A continuation of MA 125. The course includes techniques of symbolic and numerical integration; applications of the definite integral to geometry, physics, economics, and probability; improper integrals; parametric equations; sequences and series; Taylor polynomials and Taylor series.

Prerequisite: A grade of C or better in Calculus I (MA 125, or an equivalent course).

Text: *Calculus: Early Transcendentals* by Jon Rogawski, W. H. Freeman, New York, 1st edition (2008). ISBN-13: 978-1-4292-1073-7. The course begins with a review of the definition of the integral and the Fundamental Theorem of Calculus, then covers additional material from Chapter 5 and most of Chapters 6, 7, 8, 10 and 11.

Objectives: The course is designed to provide depth of understanding of the underlying concepts of integral calculus and infinite series, and effective use of these ideas in applications. The course will further develop students' skills in mathematical reasoning, problem-solving, and expressing mathematical ideas clearly. This course fulfills the General Education Competency of Quantitative Reasoning (see University Bulletin).

Upon successful completion of MA 126 Calculus II, students should be able to:

- understand, define, and interpret the definite integral;
- state, explain, and apply the fundamental theorem of calculus;
- perform techniques of integration including change of variables, integration by parts, partial fractions, and trigonometric substitution;
- recognize and to calculate improper integrals;
- apply integrals to concepts such as area, volume, arc length, density, mass, work, and energy;
- understand infinite sequences and series, apply tests of convergence/divergence, and find interval of convergence for power series;
- manipulate power series within the interval of convergence and represent analytic functions as Taylor series or MacLaurin series;
- describe curves, lines, and planes in space in terms of vector equations and parametric equations.

Attendance: You are expected to attend class regularly and participate in discussions. You are responsible for finding out what you missed on days when you are unable to attend.

Homework: Homework will be assigned but not collected. You are responsible for checking your own work. Work all assignments promptly and carefully: this is essential to learning the material and doing well on quizzes and exams.

Quizzes: There will be at least seven 20-point quizzes. There will be no make-up quizzes, but your two lowest quiz grades (including missed quizzes) will be dropped. If you have legitimate reasons for missing more than two quizzes, please see me.

Exams: There will be three in-class exams, **tentatively** scheduled for February 22, March 27, and May 24. The final exam is on Wednesday, May 9 at 1–3 p.m. in ILB 410. If you are unable to attend an exam you should contact me promptly: before the exam if possible, and otherwise, before the next class. A compelling reason for absence will entitle you to a make-up exam.

Grading policy: In determining the final grade, course work will be weighted as follows: Quizzes 20%, in-class exams 48%, final exam 32%. Class participation will be considered in raising borderline letter grades.

Changes: The policies and requirements may be modified as circumstances dictate. Such changes will be provided to the students in class and in writing.

Student Academic Conduct Policy and Academic Disruption Policy: These policies are published annually in *The Lowdown*, at <http://www.southalabama.edu/lowdown/>.

Student Resources and Course Assistance

Supplemental Instruction: Supplemental Instruction (SI) is an additional resource attached to courses that are generally more difficult for many students. It is not extra tutoring for weak students; it **is** additional meeting time outside of class time where students will learn from other students how best to prepare and learn in particular courses. Your SI leader, Amanda Bolding, is a student who has succeeded in the calculus sequence and is comfortable working with other students to help them prepare for the class. This resource is offered in selected classes for no additional fee, and you are strongly encouraged to take advantage of it. Sessions begin the second week of class. Check the course website, or the SI bulletin board in the 3rd floor hallway of ILB, for scheduling information.

Tutoring lab: The department offers a tutoring lab to all students taking mathematics and statistics classes. There is no lab fee. Tutoring takes place in ILB 456, beginning in the second week of class. Please check the bulletin board outside ILB 325 for details.

Online help: Look for links on the course webpage. Google *Susan Williams MA 126* to find it.

JagSuccess Program: JagSuccess is a program intended to help students be successful in 100 and 200 level courses. If you are not doing well, you will get an email instructing you to see your professor along with instructions to access an online survey regarding class habits and study skills. Based on your survey score, you will receive recommendations for improving your performance. You will also be given a link to an online tutorial intended to help with common problems affecting academic performance. Watch for this email during week 7 of this semester.

Disabilities: If you have a specific disability that qualifies you for academic accommodations, please notify the instructor/professor and provide certification from Special Student Services (460-7212).