

MA 227-102

Calculus III

Spring 2011

Instructor: Yorck Sommerhäuser

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Office hours: Monday, 10:15 am–11:15 am, Tuesday 10:00 am–11:00 am, Wednesday, 10:15 am–11:15 am, Thursday 10:00 am–11:00 am

Prerequisites: C or better in Calculus II (MA 126) or an equivalent course

Textbook: J. Rogawski, Calculus: Early transcendentals, 1st ed., W. H. Freeman, New York, 2008

Course description: Continuing Calculus II, the course is an introduction to multivariable calculus. After explaining vectors and vector-valued functions, we treat the differential calculus for functions of several variables, which includes such topics as partial derivatives, the multivariable chain rule, and Lagrange multipliers. Afterwards, we cover the integral calculus for functions of several variables, including the transformation of integrals to special coordinate systems like spherical coordinates. The course concludes with line and surface integrals and the basic theorems about them, like Green's and Stokes' theorem.

Objectives: The goal of the course is to introduce the student to multivariable calculus, both theoretically and practically. Practically, the student will acquire the ability to differentiate and to integrate functions of several variables, and to compute line and surface integrals. Theoretically, the student will learn how these difficult concepts are actually defined and what the computed quantities really signify. This enhances in particular the student's spacial imaginative power.

Coverage: We cover the chapters 12-17 of the textbook almost completely.

Attendance: Attendance is required and contributes to the final grade. Four classes may be missed without affecting this grade. Absence in more than half of the classes results in failing the whole course.

Exams: There will be two midterm exams and a comprehensive final exam. No make-up exams will be offered. Calculators and other electronic devices must not be used during the exams. The midterm exams take place on Thursday, February 24 as well as Thursday, April 7. The final exam takes place Monday, May 9, 1:00 pm–3:00 pm.

Daily homework: The daily homework assignment will consist of a reading assignment and a problem assignment. One or two problems of the daily problem assignment have to be completed online via the eCompanion of the course at <http://usaonline.southalabama.edu>. The time frame for this completion begins after the lecture in which the problem was assigned, and ends one hour before the next lecture.

Weekly homework: Every week on Thursday, a set of problems will be handed out. These have to be completed and handed back the next Monday. The problem set will consist of one to three problems. Their solutions are supposed to contain detailed explanations of all necessary steps using complete English sentences.

Grading weights:

Attendance:	5%
Daily online homework:	15%
Weekly graded homework:	15 %
Midterm exams:	20% each
Final exam:	25%

Grading scale:

A:	90%
B:	80%
C:	70 %
D:	60%

Policies: Eating, drinking, and smoking is not permitted in the classroom. The use of electronic devices such as laptops, i-pods, cellphones, or calculators is not allowed unless explicitly stated by the professor. Furthermore, the policies described in the student handbook 'The Lowdown' apply.

Tutoring: The tutoring laboratory in ILB 456 provides additional help for this course.

Disabled students: If you have a specific disability that qualifies you for academic accommodations, please notify me and provide certification from the Office for Special Student Services, which is located in Room 270 of the Student Center (Tel. 460-7212).

JagSuccess: 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 me 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.