

Math 225 –Calculus III Section U015 (4 CR)
The University of South Dakota
Spring 2009
MTRF 1:00-1:50 P.M. (A&S 104B)

CONTACT INFORMATION:

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COURSE DESCRIPTION:

This course is a continuation of the study of calculus, including an introduction to vectors, vector calculus, partial derivatives, and multiple integrals.

PREREQUISITE: Math 125 Calculus II

INSTRUCTIONAL METHOD: Lecture/Discussion/Computer lab sessions/

COURSE REQUIREMENTS:

- **TEXTBOOK:** *Calculus*, Sixth Edition by James Stewart
- **Calculator:** A graphing calculator is required for the course.
- **Software** MAPLE recommended

EVALUATION PROCEDURES:

HOMEWORK/QUIZZES: Homework will be assigned each day for your practice in mastering the material. There will be weekly quizzes/labs, three to four examinations, MAPLE projects, and a comprehensive final exam. Quizzes are unannounced and you may have more than one a week. There is no make-up for missed quizzes, please do not ask.

CLASS ATTENDANCE: Class attendance is required. You are responsible for the material covered in class, if you are absent for more than 10% of the class periods you will not qualify for the final grade curve.

EXAMS: Attendance is required at all exams. We will have an exam for every chapter. The chapter exams will be announced at least one week in advance before the exams.

The comprehensive final exam is scheduled for 10:00 AM-12:00 noon. Wednesday, May 6, 2009 (Please note this is a change from most printed information**). This time is common for most of the math sections and it is unchangeable.**

GRADING:

Category	Weight	Scale	
Quizzes/Labs	20 %	90 % -100%	A
Exams	60 %	80 % - 89%	B
Final Exam	20 %	70 % - 79 %	C
		60 % - 69 %	D
		BELOW 60 %	F

IMPORTANT DATES:

- **FRIDAY, JANUARY 23, 2009** is the last day to drop a class without paying in full for the course and nothing showing on your transcript.
- **MONDAY, APRIL 6, 2009** is the last day to withdraw from a class with a “W” showing on your transcript.

FREEDOM IN LEARNING:

Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of Regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should feel free to take reasoned exception to the data or views offered in any course of study. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should contact the dean of the college which offers the class to initiate a review of the evaluation.

CHEATING/PLAGIARISM (the official College of Arts and Sciences policy follows):

The College of Arts and Sciences considers plagiarism, cheating, and other forms of academic dishonesty inimical to the objectives of higher education. The College supports the imposition of penalties on students who engage in academic dishonesty, as defined in the “Conduct” section of The University of South Dakota Student Handbook.

No credit can be given for a dishonest assignment. At the discretion of the instructor, a student caught engaging in any form of academic dishonesty may be:

- a. Given a zero for that assignment.*
- b. Allowed to rewrite and resubmit the assignment for credit.*
- c. Assigned a reduced grade for the course.*
- d. Dropped from the course.*
- e. Failed in the course.*

DISABILITY SERVICES STATEMENT:

Any student who feels s/he may need academic accommodations or access accommodations based on the impact of a documented disability should contact and register with Disability Services during the first week of class. Disability Services is the official office to assist students through the process of disability verification and coordination of appropriate and reasonable accommodations. Students currently registered with Disability Services must obtain a new accommodation memo each semester. Ernetta L. Fox, Director, Disability Services, Room 119 Service Center (605) 677-6389, Web Site: www.usd.edu/ds; E-mail: dservices@usd.edu.

COURSE GOALS:

This class fulfills the following Goals of the South Dakota System General Education Requirements:

BOR Goal #5. Students will understand and apply fundamental mathematical processes and reasoning.

SLO(5.1) As a result of taking this course students will be able to use mathematical symbols and mathematical structure to model and solve real world problems.

- Students ability to use mathematical symbols and structure from calculus II (Vectors, Surfaces, Partial derivatives and Optimization) that are used in solving real world problems will be assessed using quizzes, exams, and a final.

SLO(5.2) As a result of taking this course students will demonstrate appropriate communication skills related to mathematical terms and concepts.

- Communications skills will be assessed via a written report of the group project that would be similar to one turned in to an employer at a job setting.

SLO(5.3) As a result of taking this course students will demonstrate the correct use of quantifiable measurements of real world situations.

- Correct units are applicable to most story problems in the text that are similar to problems that arise in the real world and student understanding will be assessed using quizzes, exams, and a final exam.

Tentative Course Outline/Schedule:

The time spend in each topic is variable. There are many factors that can impact what material is discussed in a class session.

Day	Date	Session No.	Material
Thursday	Jan. 15	1	Introduction to the course. Section 13.1 Three-Dimensional Coordinates Systems
Friday	Jan. 16	2	Section 13.2 Vectors
Monday	Jan. 19	Holiday	Martin Luther King Day
Tuesday	Jan. 20	3	Section 13.3 The Dot Product
Thursday	Jan. 22	4	Section 13.4 Cross product
Friday	Jan. 23	5	Maple Lab unit I: Intro to the software Maple
Monday	Jan. 26	6	Section 13.4 Continued
Tuesday	Jan. 27	7	Section 13.5 Equations of Lines and Planes
Thursday	Jan 29	8	Section 13.5 Continue
Friday	Jan 30	9	Maple Lab Unit 2: Quadratic Surfaces.
Monday	Feb 2	10	Section 13.6 Quadratic Surfaces
Tuesday	Feb 3	11	Review for test I. Students bring the questions.
Thursday	Feb 5	12	Test I: Chapter 13.
Friday	Feb 6	13	Section 14.1 Vector Functions and Space Curves
Monday	Feb 9	14	Section 14.2 Derivatives and Integrals of Vector Functions
Tuesday	Feb 10	15	Section 14.3 Arc Length and Curvature
Thursday	Feb 12	16	Section 14.3 Continue
Friday	Feb 13	17	Maple Lab Unit 3: Curvature

Monday	Feb 16	Holiday	Holiday President's Day
Tuesday	Feb 17	18	Section 14.4 Motion in Space: Velocity and Acceleration
Thursday	Feb 19	19	Section 14.4 Continue
Friday	Feb 20	20	Review Session for test II
Monday	Feb 23	21	Test II: Chapter 14
Tuesday	Feb 24	22	Section 15.1 Function of Several Variables
Thursday	Feb 26	23	Section 15.2 Limit and Continuity
Friday	Feb 27	24	Maple Lab Unit 4: Functions
Monday	March 2	25	Section 15.3 Partial Derivatives
Tuesday	March 3	26	Section 15.3 Continued
Thursday	March 5	27	Section 15.4 Tangent Planes and Linear Approximations
Friday	March 6	28	Section 15.4 Continued
Monday	March 9	No class	Spring Break
Tuesday	March 10	No class	Spring Break
Thursday	March 12	No class	Spring Break
Friday	March 13	No class	Spring Break
Monday	March 16	29	Section 15.5 The Chain Rule
Tuesday	March 17	30	Section 15.5 Continued
Thursday	March 19	31	Section 15.6 Directional derivatives and the Gradient Vector
Friday	March 20	32	Section 15.6 Continued
Monday	March 23	33	Review Session for test III
Tuesday	March 24	34	Test III
Thursday	March 26	35	Section 15.7 Maximum and Minimum
Friday	March 27	36	Section 15.7 Continued
Monday	March 30	37	Section 15.8 Lagrange Multipliers
Tuesday	March 31	38	Section 15.8 Continued
Thursday	April 2	39	Section 16.1 Double Integrals
Friday	April 3	40	Section 16.2 Iterated Integrals
Monday	April 6	41	Section 16.2 Continued
Tuesday	April 7	42	Section 16.3 Double Integrals over General Regions
Thursday	April 9	43	Section 16.3 Continued
Friday	April 10	No class	Easter Break
Monday	April 13	No class	Easter Break
Tuesday	April 14	44	Section 16.4 Double Integrals in Polar Coordinates
Thursday	April 16	45	Section 16.4 Continued
Friday	April 17	46	Section 16.5 Applications of Double Integrals
Monday	April 20	47	Section 16.5 Continued
Tuesday	April 21	48	Review Session test IV
Thursday	April 23	49	Test IV
Friday	April 24	50	Section 16.6 Triple Integrals
Monday	April 27	51	Section 16.7 Triple Integrals in Cylindrical Coordinates
Tuesday	April 28	52	Section 16.8 Triple Integrals in Spherical Coordinates
Thursday	April 30	53	Section 16.9 Change of Variables in Multiple Integrals
Friday	May 1	54	Review for the final exam.
Wednesday	May 6	Exam	Final Exam: 10:00 AM – 12:00 (noon)