University of St. Thomas  
Department of Mathematics  
Syllabus for MATH 2431 (Calculus III)  
Fall 2015  
Section A

Instructor: Dr. Sheila J. Waggoner

Contact Information:  
Office: MATH HOUSE, Room 204  
Phone: 713-525-3818  
Email: sheilaw@stthom.edu

Office Hours:  
Monday, Tuesday, Wednesday and Thursday  
02:00pm - 04:00pm  
or  
by appointment (Send an email to request an appointment if you cannot meet with me during the office hours given above.)

Class Meetings:  
All classes are held in Strake 202.  
Tuesday and Thursday  
08:10am – 09:25am  
and  
Wednesday  
08:10am - 09:00am

Catalog Description:  
Vectors and geometry of space, vector functions, partial derivatives, and multiple integrals.

Prerequisite:  
A grade of C or better in Math 1432 (Calculus II).

Required Text:  
Course Content:

CHAPTER 12 – Vectors and the Geometry of Space

- Three-Dimensional Coordinate Systems
- Vectors
- The Dot Product
- The Cross Product
- Equations of Lines and Planes
- Cylinders and Quadric Surfaces

CHAPTER 13 – Vector Functions

- Vectors and Space Curves
- Derivatives and Integrals of Vector Functions
- Arc Length and Curvature

CHAPTER 14 – Partial Derivatives

- Functions of Several Variables
- Limits and Continuity
- Partial Derivatives
- Tangent Planes and Linear Approximations
- The Chain Rule
- Directional Derivatives and the Gradient Vector

CHAPTER 15 – Multiple Integrals

- Double Integrals over Rectangles
- Iterated Integrals
- Double Integrals over General Regions
- Triple Integrals

(Additional Topics from Chapters 12 – 15 as Time Permits)

Course Grade:

Attending class daily, participating and concentrating in class, working diligently on homework assignments, getting help when needed, preparing carefully for exams, and maintaining a positive attitude throughout the semester are important for your success in this course.

Your grade for the course will be determined in the following manner:

16% Homework Book and Attendance/Lateness/Classroom Conduct
64% Major Tests - There will be four equally weighted major tests given in class. Each test grade accounts for 16% of your course grade.

20% Final Examination (Cumulative)

Day, time, and location for final examination:
Tuesday, 15 December 2015
08:00am - 10:30am
Strake 202

All grades except the grade on the final examination will be posted on Blackboard. Under no circumstances will information about your grades be given out by email or by phone due to reasons of confidentiality. There will be no response to emails from you about your grades or progress in the course. If you want to discuss your grades or progress in the course, you need to come to my office and talk to me personally.

**Homework Book and Attendance/Lateness/Classroom Conduct (16% of Grade)**

There will be five grades in this category: 4 homework grades and 1 grade for attendance/lateness/classroom conduct. These grades will be averaged at the end of the semester.

**Homework Book:**

The purpose of doing homework is to learn the course content. If you work hard on homework assignments and understand how to do the problems, you stand an excellent chance of doing well on major tests and the final examination. Homework should be done on a *daily* basis and *not* put off until a major examination. Simply copying homework problems from student solutions manuals, online solutions manuals, or other similar methods is NOT doing homework. Students who adopt the strategies of not working daily on homework and/or just copying homework from solutions manuals will definitely not do as well as they wish in this course.

If you have trouble with homework assignments, you should seek help *immediately*. You can ask questions in class or you can come to my office for help. Additionally, we will have mathematics majors available for tutoring in the student room in the MATH HOUSE (Room 202). Homework books will include homework assignments from the textbook or extra assignments posted as pdf documents on Blackboard. There will be four homework grades. No homework grade will be dropped. HW books are due on the day that a major test is given. On those days you should deposit your HW books in a box labeled MATH 1432 that will be placed outside my office door. Your books are due by 5:00pm. Homework assignments need to be thoroughly understood in order to do well on major examinations.

Directions for HW books are given below.
(1) Keep homework assignments in a composition book as shown in the graphic below. No other books are allowed. Homework that is worked in any other book (such as a spiral notebook) is unacceptable. In such a case your HW grade will be a zero.

![Composition Book](image)

(2) When working a particular homework assignment, you can write on front and back pages. However, a new assignment should begin on a new page. For every assignment from the textbook, you need to write the section number, title of the section, page numbers, and problem numbers at the top of the page. If HW assignments from a particular section in the textbook are divided into several parts, you should consider each part as a separate assignment and begin such an assignment on a new page and label it according to the directions given above.

(3) You must write the directions for the problems as given in the textbook. If a group of problems has the same direction, you only need to write the direction once. You also need to write down the problem. If a graph is included in the problem, you must show the graph in your HW book. It is acceptable to photocopy a graph and paste or tape the graph in your HW book.

(4) Work HW problems in pencil. Write and circle the problem numbers in the left margin. Leave at least one space between each problem. Show all work when necessary using correct notation and do not circle or box in your answers.

Homework books are graded for completeness. You begin with a score of 100 for each of the four HW grades. Failure to follow the first requirement (1) shown above will result in a grade of zero. Failure to follow the requirements listed in parts (2) through (4) above will result in an automatic deduction of 2 points for each requirement. For example, if you fail to follow all of the requirements in (2) through (4), you will begin with a score of 94. You need to attempt all problems. You will receive a deduction of one point for each missing problem.

If you do not turn in your HW books on the day of a major test, you will have 24 hours to turn it in. No HW book is accepted after the 24-hour period.

It is to your advantage to keep a similar book for notes. Since many examples with the proper use of notation will be given in class, you should write these examples in your notes and use them to work problems correctly in your HW book. Getting the “correct answer” is not enough; you must learn to write mathematics correctly. In doing so, you will see that the course content is more meaningful and understandable. Moreover, if you work problems in the correct manner
in your homework book, you will work problems well on the major tests and will not lose any points for incorrect notation.

**Attendance/Lateness/Classroom Conduct (ALCC):**

You will begin your ALCC grade with a score of 100. Any violations of the following six policies will result in points begin deducted from this original score. The ALCC grade will not be dropped.

1. **Come to class.** Attendance will be checked daily at the beginning of class. Two points will be deducted from this score for each absence. If you think that your absence should be excused, you should write a note explaining why this is the case. Emails are not substitutes for such a note and will not be accepted. Proper documentation will be required for an excused absence. For example, if you are participating in a university-sponsored activity, you should attach a corresponding note from the appropriate sponsor/advisor.

2. **Come to class on time.** You will be penalized one point for each time you are late to class. You are considered late once roll call ends and you are not seated for class. I will keep an attendance book for your class in which I will keep a record of students who are absent or late to class.

This is not an easy course and it will require your complete attention and focus in class. Any distraction during class time takes away from your ability to concentrate on the course material. Such distractions usually lead to poor performance on major tests. You do not want to leave this class knowing that you could have done better if you had just behaved in a manner that is conducive to a deep understanding of the course content. To ensure that everyone has the best chance possible to make an A, the following code of conduct will be enforced.

3. **Turn off phones during class.** Laptops, phones, other electronic devices (and so forth) should not be on your desk during class time. Any student who violates this policy will receive an automatic deduction of one point from your ALCC grade. There will be a one-point deduction each time that such a violation occurs. For those students who “surreptitiously” place their phones in their laps so that they can “text” their friends, please note that this activity is not so secretive since it is easily observable by me.

4. **Do not get up and leave the classroom except in cases of emergency.** Leaving the classroom to receive or make a phone call is not considered an emergency. Leaving the classroom to go to the restroom is not considered an emergency except in cases of illness. Leaving the classroom is an enormous distraction, particularly for your classmates. The distraction is doubled when you wander back into the classroom. Any student who violates this policy will receive an automatic deduction of one point from your ALCC grade. You will not be penalized if you know beforehand that you need to leave class.
early. Such cases should be rare and you will need a valid reason for leaving class early. I need to be notified before class begins if you must leave early.

(5) Do not study or prepare for any other subject during class time. The only textbook that is allowed on your desk is Stewart’s Calculus. You should always bring this textbook, your HW book, and your book for keeping notes to class.

(6) Do not sleep in class or put your head down on your desk.

Violation of policies (5) and (6) will also result in a deduction of one point from your ALCC grade. I will not interrupt class to point out any violations of the classroom conduct policy. Nor will I notify you at the end of class. However, I will keep notes on any violations and regularly update these notes. You should know that classroom rosters with photos are available to professors. This means that I know who you are at the beginning of the semester and will have no trouble in identifying any student who violates the classroom code of conduct.

**Major Tests (64% of Course Grade):**

There will be four major equally weighted tests during the semester. No calculators are required in this class and are not allowed on tests. (Any problem in this class that requires very difficult calculations will not appear on major tests.)

(1) Major tests will be announced at least one week in advance. The announcement will include the day of the exam, information covered on the exam, and the HW assignments that will be checked. Announcements will be given in class and on Blackboard. You should check Blackboard at least once a day to stay up-to-date with this course.

(2) If you have a letter from the Office of Counseling and Disability Services that states that you can take your major tests in another setting, you need to contact me as soon as a test is announced and arrange an appointment to take the test in my office, preferably on the same day as stated in the announcement for the major test.

(3) You should make every effort to take a major test on the day that it is scheduled. However, if you miss a major test, you need to contact me immediately by calling my office phone at 713.525.3818 to schedule a time for a make-up test. If I am not in my office, you need to leave a message with a phone number so that I can return your call. You will need to take the make-up test in my office preferably within 24 hours as stated in the announcement for the test. You will have the same amount of time that is given to the other students in your class.

**Policy on Academic Dishonesty:**

Academic dishonesty will not be tolerated. Please refer to the Policy on Academic Dishonesty in the UST Undergraduate Catalog for 2014-2015.
Disability Services for Students:

The University of St. Thomas abides by the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, which stipulates that no student shall be denied the benefits of an education "solely by reason of a handicap". If you have a documented disability that may impact your performance in this class and for which you may require accommodations, you must be registered with and provide documentation of your disability to Counseling Services/Disability Services. For more information about Disability Services for students, contact C&DS at 713-525-3162 or 713-525-6953. The University’s ADA and Section 504 Coordinator is Dr. Rose Signorello,

Important Dates for Fall Semester 2015:

- Monday, August 24, 2015: First Day of Classes
- Monday, September 7, 2015: Labor Day Holiday
- Monday – October 12 - 13, 2015: Winter Break
- Wednesday - Friday, November 25 - 27, 2015: Thanksgiving Holidays
- Friday, November 11, 2015: Last Day to Drop with W
- Friday, December 7, 2015: Last Day of Classes