

Course Syllabus



Course MATH 2413-002 Differential Calculus
Professor Dr. Paul Stanford
Term Fall 2009
Meetings MWF 11:30 a.m. to 12:20 p.m. in JO 3.516

Professor's Contact Information

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Office hours 1:00p.m.– 2:00p.m. MW, and 10:00a.m.– 11:00a.m. TR
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Teaching Assistant Brett Rhome and Brian Streit
TA Office FN 1.102
TA Office hours 3:30-5:50 MR; and 8:30-9:30 MW, 10:30-11:30M, 12:30-1:30M
TA Email bbr071000@utdallas.edu, bqs031000@utdallas.edu

General Course Information

Course Prerequisites A SAT II Mathematics Level IC Test Score of at least 600, or two years of high school algebra, one year of high school geometry, trigonometry, precalculus or MATH 2312 with a grade of at least C-.

Corequisites MATH 2013-302, MATH 2013-304 or MATH 2013-306

Other Restrictions A scientific calculator is recommended. Graphing calculators, programmable calculators, or calculators with non-numeric alpha displays or with symbolic differentiation or integration capability are *not* allowed on quizzes or exams.

Course Description

Course covers topics in differential calculus of functions of one variable; topics include limits, continuity, derivative, chain rule, implicit differentiation,

mean value theorem, maxima and minima, curve sketching, derivatives of inverse trigonometric functions, antiderivative, substitution method, and applications.

Student Learning Outcomes

1. Students will be able to formulate real world problems into mathematical statements.
2. Students will be able to develop solutions to mathematical problems at the level appropriate to each course.
3. Students will be able to describe or demonstrate mathematical solutions either numerically or graphically.

Student Learning Objectives

1. Given a narrative description of a problem that lends itself to mathematical analysis, the student will clearly define any variable quantities introduced and provide an appropriate equation, function, or formula relating those variables.
2. Given a limit statement of indeterminate form, the student will be able to apply appropriate algebraic or calculus based techniques to compute the limit.
3. Given a function, the student will be able to compute a first or Second order derivative and, if instructed, evaluate the derivative at a point in its domain.
4. Students will provide numerical results in a prescribed manner, as a percent, an interval, or with specified accuracy.
5. Students will provide a sketch of a function which exhibits characteristics determined via calculus based operations.

Problem Sessions

It is important to ensure that you are enrolled in the correct problem session, associated with this section of the course.

During problem sessions, the teaching assistant will review class material, review relevant material from pre-requisite courses, discuss the quizzes and exams, work problems, or have students work problems. You will also take the quizzes at this time. If you have questions, this is the time to ask them.

Assignments

Precalculus Review: 3(a-c), 5(a,b,d), 6(a-c), 7(a,b,d), 8(a-c), 9(a-d), 10(a-c), 11(a,b,d), 12(a,c), 13(a-c), 15, 18(c,e,h), 19(a,c,d), 21, 22, 24, 26, 28, 32(a,b,d), 33(g,h), 35(a-f), 36(a-h), 37(a,b,c), 38(a-d)

Sec 1.1: 23-44,51-57

Sec 1.2: 1-4

Sec 1.3: 9,11,13,17,19,21,23,31,33,35,36,37,39,40,41,43,45,47,49,51a,b

Sec 1.5: 7,9,11,13,15,16,21,25

Sec 1.6: 3,5,7,9,13,15,21,23,25,33,34,35,36,37,39,59,60,61,62,63,65,67

Ch 1 Rev: True-False quiz all

Sec 2.1: 1a,3a,b,5,7a,i,iv,9a

Sec 2.2: 1,3,5,7,9,13,17,19,25,27,29,31,33,34a,35

Sec 2.3: 1,3,5,7,9,10,11,12,13,15,17,21,23,25,26,27,29,37,41,46,47,48,53

Sec 2.4: 1,3,5,7,9,13,15,17,21,23,24,25,29,31,33

Sec 2.5: 3,5,7,9,11,12,13,14,15,17,19,23,25,31,33,35,36,37,39,41,42,43,47,49,61,63

Sec 2.6: 3,5,7,9,11,15,19,21,23,25,28,29,31,33,34,35,47,49,51,53,58b,63,65,69,71

Sec 2.7: 1,3,5,7,11,13,15,17,21,23(a),25,27,29,33,35,40,41,47,49

Sec 2.8: 1b,d,e,3,5,7,9,11,19,21,25,27,35,37,38,41,49,51,57

Sec 3.1: 1-35 odd, 45,46,49,51,53,55,59,61,63,66,67,71,75

Sec 3.2: 1-35 odd,41,43,47,51,55

Sec 3.3: 1-51 odd

Sec 3.4: 1-49 odd,55,57,59,61,65,73,79,81,91,93,95

Sec 3.5: 1-21 odd, 25,27,29,33,45-53all,57,63,65

Sec 3.6: 1-33 odd,37-51 odd

Sec 3.7: 1,3,5,9,13,16,19,21,23,28(a),32,33,35

Sec 3.9: 1,3,5,11,13,15,23,31,32,37,39,43

Sec 3.10: 1,3,5,7,8,10,11,13,15,17,19,21,22,23,25,31,33,37,39,40,42

Sec 4.1: 1,3,5,7,9,15,19,22,23,24,25,27,29,31,33,35,39,41,43,44,47-61odd,73,74,78

Sec 4.2: 1,2,4,5,7,11,13,14,15,19,23,25,33,35

Sec 4.3: 1,3,5,7,9,11,13,14,15,17,19,21,25,27,29,33,39,41,43,45,47,49,61,67,75

Sec 4.4: 1-63 every other odd, 69,73,77,78,81

Sec 4.5: 3,5,7,9,11,17,19,23,27,31,35,41,45,49,53,57,59,63,65

Sec 4.7: 1,3,7,9,11,13,17,23,27,31,41,49,51,60,65,69

Sec 4.9: 1-45 odd,51,57,59,61,63,64,67

Sec 5.1: 1,3,11,13,17 (use n subintervals),22,23a

Sec 5.2: 1,3,7,21,25,33a,b,35, 37,39,41,43,45,49,53,55,57

Sec 5.3: 2,3,5,7,11,13,15,19,23,25,26,28,29,31,32,33,35,37,38,43,45,55,61a,b,68,71

Sec 5.4: 1,2,3,5,6,7,9,11,14,15,16,17,18,21,23,27,29,31,33,35,37,41,42,43,48,49,51,57

Sec 5.5: 1-45 odds,51,55,57,59,61,63,65,67,69,79,81

Sec 6.1: 1,3,5,9,11,15,17,19,20,21,22,25,27,43

Sec 6.2: 1,3,4,5,6,11,13,17,23,25,33,41,45,51,63

Sec 6.3: 3,5,9,11,13,17,21,25,29,37,41

Sec 6.4: 1,3,5,6,7,9,13,14,15,17,19,21,23

Sec 6.5: 1,3,5,7,9,11,15,17,21

Wk	Mon		Wed		Fri		Score
1					8/21	Intro, Syll, 1.1/1.2	
2	8/24	1.3/1.5	8/26	1.5/1.6	8/28	2.1/2.2	Qz 1
3	8/31	2.2/2.3	9/2	2.3/2.4	9/4	2.4	Qz 2
4	9/7	Labor Day	9/9	2.5	9/11	2.5/2.6	Qz 3
5	9/14	2.6	9/16	2.7	9/18	EXAM I	
6	9/21	2.8	9/23	3.1/3.2	9/25	3.2/3.3	Qz 4
7	9/28	3.3/3.4	9/30	3.4/3.5	10/2	3.5/3.6	Qz 5
8	10/5	3.6/3.7	10/7	3.7/3.9	10/9	3.9	Qz 6
9	10/12	3.10	10/14	4.1	10/16	Sec 4.2	Qz 7
10	10/19	4.3	10/21	EXAM II	10/23	Sec 4.3	
11	10/26	4.4	10/28	4.4/4.5	10/30	4.5	Qz 8
12	11/2	4.7	11/4	4.7/4.9	11/6	4.9/5.1	Qz 9
13	11/9	5.1/5.2	11/11	5.2	11/13	5.3	Qz 10
14	11/16	5.3/5.4	11/18	5.4/5.5	11/20	EXAM III	
15	11/23	5.5	11/25	5.5/6.1	11/27	Thanksgiving	
16	11/30	6.1/6.2	12/2	6.2/6.3	12/4	6.3/6.5	
	12/7	6.4, Evals	12/9	Reading day	12/11	FINAL	

Note: The Final Exam is in CN 1.112. Other exams will also be in CN 1.112, depending on your problem session. Quizzes are taken during the problem sessions.

Required Textbooks and Materials

Calculus, Early Transcendentals, Sixth Edition, James Stewart

Suggested Course Materials

The Student Solutions Manual is recommended and available in the bookstore.

Academic Calendar

Classes begin	Thursday August 20th
Last Day to Add a Course	Thursday August 27th
Census Day	Friday September 4th
Last day to drop without a “W”	Friday September 4th
Labor Day holiday	Monday September 7th
Signature Required period begins	Tuesday September 8th
WP/WF withdrawal period begins	Thursday September 17th
Midterm grades available online	Wednesday October 14th
WP/WF withdrawal period ends	Thursday October 22nd
Thanksgiving holidays	Thursday November 26th to Saturday November 28th
Last day of classes	Monday December 7th
Reading Days	Tuesday December 8th to Wednesday December 9th
Final grades available online	Thursday December 10th to Wednesday December 23rd
Exam I	Friday September 18th
Exam II	Wednesday October 21st
Exam III	Friday November 20th
Final Exam	Friday December 11th 7:00 p.m. – 9:45 p.m. in CN 1.112

Grading Policy

Note: The grading policy will incorporate an additional quiz grade based on completion of the ALEKS.

Three Major Exams: A maximum of 100 points each; see schedule for dates.

10 Quizzes: A maximum of 25 pts each, one per week during non-exam weeks. These quizzes typically cover the Differential Calculus material from the previous week. The lowest 2 of these scores will be dropped.

One ALEKS Quiz: A maximum of 50 pts awarded for completion of the ALEKS assessment. *This assessment must be completed by 11:59 p.m., the night of August 31st.*

Comprehensive Final Exam: A maximum of 150 points.

Grade calculation:

The course grade is a percentage of 500 possible points. The final exam contributes 150 points, or, 30% of the grade. The ALEKS assessment quiz contributes 50 points, or 10% of the grade. The remaining 300 points (60%) are derived from the three major exams and the quiz average. Your quiz average is calculated by taking the sum of the best 8 quiz scores (the lowest 2 quiz scores are dropped) and dividing by 2. The best 3 scores from the quiz average and 3 major exams comprise the remaining 60% of the course grade.

Example 1: ALEKS = 10, Ex1=89, Ex2=75, Ex3=82, QzAve=84, Final=120.
Ex2 score is dropped. Course percent $= (120+89+82+84+10)/5=77$,
letter grade C+

Example 2: ALEKS=25, Ex1=75, Ex2=60, Ex3=68, QzAve=38, Final=120.
QzAve is dropped. Course percent $= (120+60+68+75+25)/5=69.6$, letter grade D+

Grade Scale:

[96.6, 100)	A+,	[93.3, 96.6)	A,	[90, 93.3)	A-,
[86.6, 90)	B+,	[83.3, 86.6)	B,	[80, 83.3)	B-,
[76.6, 80)	C+,	[73.3, 76.6)	C,	[70, 73.3)	C-,
[66.6, 70)	D+,	[63.3, 66.6)	D,	[60, 63.3)	D-,
[0, 60)	F				

Midterm grades will be computed and submitted to the records office when requested. This grade will be computed in the following manner: Average of all quizzes up to this time (no drops) 50%. Average of all exams up to this time (no drops) 50%.

Course & Instructor Policies

Test Conditions Exams and quizzes are closed book, without notes, and without graphing calculators.

Show All Work Unsupported answers are considered miracles and will receive little or no credit.

Make-up exams There will be *no* makeups except in extraordinary circumstances. Missed exams are a zero. There will be no make-up quizzes.

Extra credit There will be *no* extra credit.

Late work All students are expected to take the examinations at the announced time.

Test Collection Graded quizzes and major exams will be returned to you as soon as possible. All students are expected to collect graded quizzes and tests in a timely manner. Any document not picked up by the end of finals week will be destroyed. Final exams are not returned to the student but are held for review for one year.

Special assignments Problems will be assigned on a regular basis. Answers to most of these problems are given at the back of the textbook. Complete solutions to many of these problems may be found in the Solutions Manual.

Class attendance Classroom attendance and problem session attendance (where applicable) is expected.

Classroom citizenship Professional behavior is expected at all times. Classroom discussions are not permitted between students. Cellphones, pagers, etc. must be turned off at all times. Laptops may only be used for taking notes. Student participation in class is desired. However, please raise your hand to speak and avoid having side conversations with your classmates.

Technical Support

If you experience any problems with your UTD account you may send an email to: assist@utdallas.edu or call the UTD Helpdesk at 972 883-2911.

Field Trip Policies

Off-Campus Instruction and Course Activities

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm Additional information is available from the office of the school dean. Below is a description of any travel and/or risk-related activity associated with this course.

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD printed publication, A to Z Guide, which is provided to all registered students each academic year. The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the Rules and Regulations, Series 50000, Board of Regents, The University of Texas System, and in Title V, Rules on Student Services and Activities of the university's Handbook of Operating Procedures. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391) and online at <http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-HOPV.html> A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic Dishonesty, any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's pol-

icy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Copyright Notice

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials, including music and software. Copying, displaying, reproducing, or distributing copyrighted works may infringe the copyright owners rights and such infringement is subject to appropriate disciplinary action as well as criminal penalties provided by federal law. Usage of such material is only appropriate when that usage constitutes “fair use” under the Copyright Act. As a UT Dallas student, you are required to follow the institutions copyright policy (Policy Memorandum 84-I.3-46). For more information about the fair use exemption, see <http://www.utsystem.edu/ogc/intellectualproperty/copypol2.htm>

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a students U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts. Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester’s course catalog. Administration procedures must be followed. It is the student’s responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of “F” in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the universitys Handbook of Operating Procedures.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called “the respondent”). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to

the respondent with a copy of the respondents School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Deans decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semesters end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22

PO Box 830688

Richardson, Texas 75083-0688

(972) 883-2098 (voice or TTY)

disabilityservice@utdallas.edu

If you anticipate issues related to the format or requirements of this course, please meet with the Coordinator of Disability Services. The Coordinator is available to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Services to notify them of your eligibility for reasonable accommodations. Disability Services can then plan how best to coordinate your accommodations.

It is the students responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated. The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment. If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

These descriptions and timelines are subject to change at the discretion of the Professor.