MATH 2413.0u1 - Differential Calculus

Summer 2024

Lecture section: Monday & Wednesday 10:00 am – 12:15 pm, **SCI 3.250**
Instructor: Diarisoa Mihaja Rakotomalala
Email: mihaja@utdallas.edu
Office Hours: MW 12:15 pm - 1:15 pm (Since my office hours immediately follow the class, please feel free to stay in the classroom after the lecture if you have any questions or wish to discuss something with me.)

Course Description: The MATH 2413 - Differential Calculus (4 semester hours) 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. There will be four hours of lectures and two hours of discussions each week for MATH 2413. You will automatically be enrolled in the problem section. Not all MATH/STAT courses may be counted toward various degree plans. Please consult your degree plan to determine the appropriate MATH/STAT course requirements.

Course Pre-requisites, Co-requisites, and/or Other Restrictions:

- Prerequisite: 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, or precalculus, or score of 80% on ALEKS math placement exam or a grade of at least a C- in MATH 2306 or MATH 2312.
- Co-requisites: Enrollment in the following problem section is mandatory.

Problem Section	Day and Time	Location	TAs	
MATH 2413.3u1	Monday 3:00 pm - 5:15 pm	CB 1.219	Jianpeng Cao	jianpeng.cao@utdallas.edu
			Cole Cash	cole.cash@utdallas.edu

Problem section will be held every week.
During problem section, the TA shall:

- review class material and relevant material from prerequisite courses
- return and discuss quizzes and exams
- work problems, or have students work problems
- entertain questions
- administer quizzes

Student Learning Objectives/Outcomes :

- Students will be able to formulate real world problems into mathematical statements.

  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 variable

- Students will be able to develop solutions to mathematical problems at the level appropriate to each course.

  - Given a limit statement of indeterminate form, the student will be able to apply appropriate algebraic or calculus based techniques to compute the limit.

  - 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.

- Students will be able to describe or demonstrate mathematical solutions either numerically or graphically.

  - Students shall provide a qualitative, planar sketch which clearly indicates prescribed attributes.

  - Students will provide numerical results in a prescribed manner, as a percent, an interval, or with specified accuracy.

Suggested Course Materials: Class materials, which are intended to supplement the in-class experience, will be provided by the instructor and made available to all registered students during the course. These materials are for the exclusive use of registered students.

Textbooks and Materials

- **Class Lecture Notes:** These will be made available via eLearning after each lecture.
- **Recommended Texts:** *Calculus, Early Transcendentals 8th Edition*, Stewart.
- **Calculators:** A scientific calculator is recommended. Graphing calculators, programmable calculators, calculators with non-numeric displays, calculators with calculus operations, smart watches, or cell phones are **NOT ALLOWED** on quizzes or exams.

URL: http://elearning.utdallas.edu requires your NETID and password to login. If successful, you will see a link to the complete syllabus and any other additional course materials. You can view your grades, use the email tool, or utilize the discussion tool to communicate with your classmates. You will receive a notice via eLearning (either an announcement, or an E-mail) if there is additional information, exam date/location change, etc, or an urgent message, class canceled, etc, that directly impacts this course. Should a personal situation arise that you feel your instructor needs to be aware of, send that information directly to your instructor (not via e-learning).

The Student Success Center offers free help in math, physics and statistic courses to UT Dallas students currently enrolled in classes. Hours of operation can be found at https://www.utdallas.edu/studentsuccess

Academic calendar:

June 12	Last day to drop a class without a "W"
June 13 – July 11	Approvals required to withdraw

GRADING SCHEME:

- The course grade is determined from the following:
  - 10 Graded Homework Sets
  - 10 Quizzes
  - 2 Major Exams (Exam 1 and Exam 2)
  - 1 Comprehensive Final Exam
- Weights:
  - 15% **Homework:** A pdf file of weekly homework (HW) will be posted each week on eLearning. You can print the pdf of HW, write your solutions in the space provided. If printer is not available, write the solutions on separate sheets of paper and make sure to clearly indicate question numbers. Scan your HW as a single pdf and upload it on elearning before every Sunday at 11:59 pm.
  - 20% **Quizzes:** Each quiz will be given during the last 20 minutes of the problem section (during the weeks identified in the schedule).

  - 40% **Exam 1 and Exam 2**: The lower of those 2 exam grades will constitute 15% of the course grade; the greater will constitute 25%.
  - 25% **Final Exam:** The Final Exam is not optional, and is comprehensive.

- Grade Scale:

[96.5,100]...A+	[92.5,96.5)...A	[89.5,92.5)...A-
[86.5,89.5)...B+	[82.5,86.5)...B	[79.5,82.5)...B-
[76.5,79.5)...C+	[72.5,76.5)...C	[69.5,72.5)...C-
[66.5,69.5)...D+	[62.5,66.5)...D	[59.5,62.5)...D-
[0,59.5)...F		

Schedule (subject to change)

Week	Monday	Lecture	Problem Section	Wednesday	Lecture	Sunday	Monday	Friday
1				May 29	Review CH1	HW1		
2	June 3	2.2, 2.4	Review CH 1	June 5	2.3	HW2	Quiz1	
3	June 10	2.5, 2.6	2.2, 2.3, 2.4	June 12	2.7	HW3	Quiz 2	
4	June 17	2.8, 3.1	2.5, 2.6, 2.7	June 19	**No lecture**	HW4	Quiz 3	**Exam 1**
5	June 24	3.2, 3.3	2.8, 3.1, 3.2	June 26	3.4, 3.5	HW5	Quiz 4	
6	July 1	3.6, 3.9	3.2, 3.3, 3.4, 3.5	July 3	3.10, 4.1	HW6	Quiz 5	
7	July 8	4.2, 4.3	3.6, 3.9. 3.10, 4.1	July 10	4.3	HW7	Quiz 6	
8	July 15	4.4, 4.7	4.2, 4.3	July 17	4.9	HW8	Quiz 7	**Exam 2**
9	July 22	5.1, 5.2	4.4, 4.7, 4.9	July 24	5.2, 5.3	HW9	Quiz 8	
10	July 29	5.4, 5.5	5.1, 5.2, 5.3	July 31	5.5, 6.1	HW10	Quiz 9	
11	August 5	6.2, 6.3	5.4, 5.5, 6.1	August 7	Review		Quiz 10	**Exam 3**

Important Dates

- **Exam 1:** Friday, June 21 - UTD Testing Center
- **Exam 2:** Friday, July 19 - UTD Testing Center
- **Final Exam:** Friday, August 9 - UTD Testing Center

About UTD Testing Center: You will need to make a reservation at least 2 days (48 hours) before the exam date.

1. Go to https://ets.utdallas.edu/testing-center and click on "STUDENTS CLICK HERE TO REGISTER FOR YOUR EXAM"
2. Select the School / Department that your exam is associated with: **School of Natural sciences and mathematics (NSM)**
3. LOOK CLOSELY and select the CORRECT EXAM from among those listed: Look for **MATH 2413.0u1 - Exam__**

Expectations: In addition to attending lectures, it is important for students to regularly and actively participate in the course by providing feedback and asking questions either during class/problem section or office hours.

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 policy 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.

UT Dallas Syllabus Policies and Procedures: The information at http://go.utdallas.edu/syllabus-policies constitutes the University's policies and procedures segment of the course syllabus.

Academic Calendar: Please refer to the UT Dallas academic calendar for important dates, such as university closings and withdrawal deadlines (http://www.utdallas.edu/academiccalendar/).

Students requiring special accommodations are strongly encouraged to contact the UTD AccessAbility office.

Comet Creed: This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"*As a Comet, I pledge honesty, integrity, and service in all that I do.*"

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Note:  The descriptions and timelines contained in this syllabus are subject
to change at the discretion of the Professor.
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