

# Syllabus for HNRS 2413 (Honors Calculus I)

## Section 001

### Fall 2019

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**Office:** RBN 4009  
**Office Hours:** MoWe 2:30–4:00 p.m., or by appointment

**Lecture Times:** MoWeFr 10:30–11:45 a.m.  
**Lecture Rooms:** RBN 3038

### Catalog Description of Course

Interdisciplinary approach to the development of calculus. This course covers all topics covered in MATH 2413 plus additional topics. Students cannot receive credit for both HNRS 2413 and MATH 2413. Prerequisite: Invitation by Honors Program.

### Course Learning Objectives

At the end of the course, students should be able to do the following:

- Determine limits, continuity, and differentiability of functions from graphs.
- Compute derivatives, indefinite integrals, and definite integrals of various functions (including those composed of polynomials, roots, exponential functions, logarithmic functions, trigonometric functions, and inverse trigonometric functions) from algebraic formulas.
- Apply the notion of the derivative of a function to analyze the geometric behavior of functions and solve “real-world” related rates and optimization problems.
- Understand the statements and significance of the main single-variable calculus theorems (including the Intermediate Value Theorem, the Extreme Value Theorem, the Mean Value Theorem, and the Fundamental Theorem of Calculus), and be able to apply these to answer questions.
- Generally interpret, discuss, and solve problems dealing with the notions of limits, derivatives, and integrals, and especially how the latter two relate to the solutions of the tangent line problem and area problem.

### Textbook

*Essential Calculus: Early Transcendentals*, Second Edition, by James Stewart.  
ISBN-10: 1-133-11228-5 ISBN-13: 978-1-133-11228-0

## **Expectations**

You are expected at the outset of this course to be proficient in skills taught in typical college algebra and pre-calculus courses, especially including algebra and trigonometry. You should be able to apply algebraic and trigonometric manipulations without being directly prompted.

## **Grading**

Good mathematical reasoning and communication is more important to me than getting the correct answer. As such, the final answer in a problem may not be worth very many points compared to the work required to achieve the answer. In particular, I will count off for messy work and bad notation.

## **Reading**

To maximize the amount you learn and the probability of doing well in this course, you should read the textbook. I recommend lightly reading the section once before we go over it in class (enough to be able follow what we're doing in class), and then reading carefully for details after we have covered the material in class.

## **Canvas**

A Canvas site will be set up for the course. Notes, announcements, and grades will be posted there.

## **Homework**

Homework problems from each section will be posted on the notes. These problems will not be taken up, but doing them is vital for your learning!

## **Quizzes**

There will be ten quizzes during the semester, all on Fridays (see calendar below). There will be no make-up quizzes except in pre-approved or verifiable emergency situations. Quiz questions will be very similar to homework questions. The lowest quiz grade will be dropped.

## Exams

There will be four in-class midterm tests during the semester and a cumulative final after classes end. All midterm tests will be held in the same room at the same time as the lectures; the location and time of the final will be announced later. (Since our class is a non-standard meeting time, I will have to request a time slot and get it approved. It will probably be either 10:15 a.m.–12:15 p.m. on Wednesday, December 11, or 8–10 a.m. on Friday, December 13). The dates of the midterm tests are:

Midterm 1	Wednesday, September 18
Midterm 2	Wednesday, October 9
Midterm 3	Wednesday, October 30
Midterm 4	Wednesday, November 20
Final	TBD

No books, notes, or calculators will be allowed on any exam. There will be no make-up exams except in pre-approved or verifiable emergency situations. No exam grades will be dropped (but see “Be Like Swoop” below).

## Attendance Policy

Attendance will be taken daily at the and counted as part of the grade. The only excused absences will be those cleared by the instructor beforehand and those caused by verifiable emergencies.

## Withdrawal

*Monday, September 9:* census date; i.e., last day to withdraw without penalty

*Monday, November 4:* last day to withdraw with a “W”

## Calculator Policy

Calculators will not be allowed on quizzes or exams.

## Supplemental Instruction and PASS Tutoring

I’m not sure about SI yet, but I’ll update you as soon as I hear something.

The PASS Tutoring Center will hold Cal I tutoring sessions in LIB 401 (on the fourth floor of the library). The Cal I tutors are Amit Pokharel and Conrad Tumwesigye. The hours for Cal I tutoring are as follows:

Mon	Tues	Wed	Thurs	Fri	Sun
12–4, 4:30–7:30 pm	4:30–7:30 pm	4:30–7:30 pm	4:30–7:30 pm	12–4 pm	4–8 pm

There is also free tutoring available in the Mathematics Learning Center (MLC) in RBN 4021.

## Projects

Projects will be assigned near the end of the semester. Each student will have to give a 10-15 minute presentation, turn in a short write-up on a topic, and be actively listening and engaged when other students are presenting. (I’ll type up a list of questions for each project to help guide your study.)

## Be Like Swoop

If you meet the following conditions, half the points you missed on your *two worst* midterm tests will be added back at the end of the semester:

- Average above 40% on all midterm tests (before adding half back on any).
- Miss no more than three classes this semester, and have a doctor's note or good excuse for all of these ("good" is up to my judgement).
- Complete and submit the following to me by Friday, December 6, at 3:00 pm:
  - For all the questions for which you missed points on *all midterm tests*, write up (1) a careful, correct solution and (2) a short description of the error you made and why it was an error.
  - Make up five problems that could appear on the final exam and are different from any of the problems on any of the midterm tests and homework (although they can be similar), and write up careful, correct solutions to these.
  - Make up a limerick that captures a general concept, formula, theorem, or method from the course. For example, here's (a fairly bad) one I made up for the product rule (I'm sure you can do much better!):

Take a function named  $\alpha$  (alpha) and another named  $\xi$  (xi).  
In order to compute the derivative of the product of these,  
find the derivative of  $\xi$  and multiply  $\alpha$ ,  
then do the same, only vice versa.  
The sum of the two is the answer we seek!

## Grading

A student's final course grade will be a weighted average of attendance, quiz grades, midterm test grades, and final exam grade. The weights are as follows:

Attendance	5%
Project	15%
Quizzes	10%
Midterm 1	12.5%
Midterm 2	12.5%
Midterm 3	12.5%
Midterm 4	12.5%
Final	20%

Your final letter grade will determined by a scheme no harsher then the following:

greater than or equal to 90%	A
greater than or equal to 80% and less than 90%	B
greater than or equal to 70% and less than 80%	C
greater than or equal to 60% and less than 70%	D
less than 60%	F

## Course Content

We will plan on covering the following sections from the textbook (adjustments may be made during the semester however):

- 1.3 The Limit of a Function
- 1.4 Calculating Limits
- 1.5 Continuity
- 1.6 Limits Involving Infinity
  
- 2.1 Derivatives and Rates of Change
- 2.2 The Derivative as a Function
- 2.3 Basic Differentiation Formulas
- 2.4 The Product and Quotient Rules
- 2.5 The Chain Rule
- 2.6 Implicit Differentiation
- 2.7 Related Rates
- 2.8 Linear Approximations and Differentials
  
- 3.1 Exponential Functions
- 3.2 Inverse Functions and Logarithms
- 3.3 Derivatives of Logarithmic and Exponential Functions
- 3.4 Exponential Growth and Decay
- 3.5 Inverse Trigonometric Functions
- 3.6 Hyperbolic Functions
- 3.7 Indeterminate Forms and l'Hospital's Rule
  
- 4.1 Maximum and Minimum Values
- 4.2 The Mean Value Theorem
- 4.3 Derivatives and the Shapes of Graphs
- 4.4 Curve Sketching
- 4.5 Optimization Problems
- 4.6 Newton's Method
- 4.7 Antiderivatives
  
- 5.1 Areas and Distances
- 5.2 The Definite Integral
- 5.3 Evaluating Definite Integrals
- 5.4 The Fundamental Theorem of Calculus
- 5.5 The Substitution Rule

## Schedule

The following is an idealized schedule for the course. (We'll almost certainly deviate from this at some point.)

Monday		Wednesday		Friday	
8/26	Syllabus, Algebra Review	8/28	Section 1.3	8/30	Section 1.4 Quiz 1
9/2	<b>NO CLASS</b> (Labor Day)	9/4	Section 1.5	9/6	Section 1.6 Quiz 2
9/9	Section 2.1 Last day to withdraw without penalty	9/11	Section 2.2	9/13	Section 2.3 Quiz 3
9/16	Section 2.4	9/18	<b>Midterm 1</b>	9/20	Section 2.5
9/23	Section 2.6	9/25	Section 2.7	9/27	Section 2.8 Quiz 4
9/30	Section 3.1	10/2	Section 3.2	10/4	Section 3.3 Quiz 5
10/7	Section 3.4	10/9	<b>Midterm 2</b>	10/11	Section 3.5
10/14	Section 3.6	10/16	Section 3.7	10/18	Section 4.1 Quiz 6
10/21	Section 4.2	10/23	Section 4.3	10/25	Section 4.4 Quiz 7
10/28	Section 4.5	10/30	<b>Midterm 3</b>	11/1	Section 4.3
11/4	Section 4.6	11/6	Section 4.7	11/8	Section 5.1 Quiz 8
11/11	Section 5.2 Last day to withdraw with "W"	11/13	Section 5.3	11/15	Section 5.4 Quiz 9
11/18	Section 5.5	11/20	<b>Midterm 4</b>	11/22	Flex/Special Topic?
11/25	<b>NO CLASS</b> (Thanksgiving Break)	11/27	<b>NO CLASS</b>	11/29	<b>NO CLASS</b>
12/2	Project Presentations	12/4	Project Presentations	12/6	Project Presentations
12/9	<b>NO CLASS</b> (Study Day)	12/11	Final Exam?	12/13	Final Exam?

(All of the following is standard, UT Tyler-wide, official stuff required to be on the syllabus.)

## **UT Tyler Honor Code**

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

## **Students Rights and Responsibilities**

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please go to this website: <http://www.uttyler.edu/wellness/rightsresponsibilities.php>

## **Campus Carry**

We respect the right and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>

## **UT Tyler a Tobacco-Free University**

All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors. Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products. There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit [www.uttyler.edu/tobacco-free](http://www.uttyler.edu/tobacco-free).

## **Grade Replacement/Forgiveness and Census Date Policies**

Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. Grade Replacement Contracts are available in the Enrollment Services Center or at <http://www.uttyler.edu/registrar>. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar. Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract. The Census Date is the deadline for many forms and enrollment actions of which students need to be aware. These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)

- Schedule adjustments (section changes, adding a new class, dropping without a “W” grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid

## **State-Mandated Course Drop Policy**

Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date). Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions

## **Disability/Accessibility Services**

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University of Texas at Tyler offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or you have a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler> and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with Cynthia Lowery, Assistant Director of Student Services/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <http://www.uttyler.edu/disabilityservices>, the SAR office located in the University Center, #3150 or call 903.566.7079

## **Student Absence due to Religious Observance**

Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester

## **Student Absence for University-Sponsored Events and Activities**

If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed

## **Social Security and FERPA Statement**

It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically



## Emergency Exits and Evacuation

Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services

## Student Standards of Academic Conduct

Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but 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.

i. "Cheating" includes, but is not limited to:

- copying from another student's test paper;
- using, during a test, materials not authorized by the person giving the test;
- failure to comply with instructions given by the person administering the test;
- possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
- using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
- collaborating with or seeking aid from another student during a test or other assignment without authority;
- discussing the contents of an examination with another student who will take the examination;
- divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructor has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
- substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
- paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
- falsifying research data, laboratory reports, and/or other academic work offered for credit;
- taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
- misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.

- ii. “Plagiarism” includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another’s work and the submission of it as one’s own academic work offered for credit.
- iii. “Collusion” includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.
- iv. All written work that is submitted will be subject to review by plagiarism software.

### **UT Tyler Resources for Students**

- The Mathematics Learning Center, RBN 4021. This is an open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.
- UT Tyler Writing Center (903.565.5995), [writingcenter@uttyler.edu](mailto:writingcenter@uttyler.edu)
- UT Tyler Tutoring Center (903.565.5964), [tutoring@uttyler.edu](mailto:tutoring@uttyler.edu)
- UT Tyler Counseling Center (903.566.7254)