Math 125 - Calculus I
Spring 2023 Syllabus

Contents

1 Instructors

1.1 Lecture Instructors' Information

Students attend lectures three times per week MWF and they will attend laboratory sections two times per week (MW or TuTh) with a graduate teaching assistant (GTA).

Instructor	Instructor's Email	Office	Section	Time	Classroom
Dr. Tori Hudgins (Course Coordinator)	thudgins@ku.edu Zoom	M 2-3 PM, TR 11AM-12PM Snow 651A	46968	MWF 1:00-1:50 PM	Budig 110
Sungmin Won	goretti.won@ku.edu	Thurs 2-3 PM Snow 557	55792	MWF 8:00-8:50 AM	Snow 302
Monalisa Dutta	m819d903@ku.edu	Tues 2:30-3:30 PM Snow 544	55863	MWF 1:00-1:50 PM	Strong 337

1.2 Lab Instructors' Information

Instructor	Instructor's Email/Zoom	Office	Section	Time	Classroom
Rohitha Rathamsetty	rohitha.rathamsetty@ku.edu Zoom	Thurs 10:30-11:30 AM Snow 621	46971	MW 9-9:50AM	Learned 1131
Rohitha Rathamsetty	rohitha.rathamsetty@ku.edu Zoom	Thurs 10:30-11:30 AM Snow 621	46970	MW 10-10:50AM	Learned 1131
Moein Moradi	moradi@ku.edu Zoom, Password: 1111	Thurs 2-3 PM Snow 551	46969	MW 2-2:50PM	Learned 1131
Moein Moradi	moradi@ku.edu Zoom, Password: 1111	Thurs 2-3 PM Snow 551	47619	MW 3-3:50PM	Learned 1131
Sungmin Won	goretti.won@ku.edu Zoom	Thurs 2-3 PM Snow 557	55792	TuTh 8-8:50AM	Snow 302
Jinjin Zhang	jinjinzhang@ku.edu Zoom, Password: 125521	Thurs 2-3 PM Snow 559	46972	TuTh 11-11:50AM	MS 106
Monalisa Dutta	m819d903@ku.edu Zoom, Password: 142004	Tues 2:30-3:30 PM Snow 544	55864	TuTh 1-2:15PM	Strong 337
Logan Honeycutt	lrhoneycutt@ku.edu Zoom, Password: 4636	Fri 2-3 PM Snow 305	46973	TuTh 1-1:50PM	Wescoe 4071
Logan Honeycutt	lrhoneycutt@ku.edu Zoom, Password: 4636	Fri 2-3 PM Snow 305	47618	TuTh 2-2:50PM	Wescoe 4071

2 Structure of Math 125

2.1 Disclaimers

This syllabus contains the basic information for MATH 125. Students should regularly visit the course Canvas page to find their exam scores, assignment scores, course announcements, assignments, detailed course schedule, and links to course materials.

Students must **regularly check both their KU email and the course Canvas page**.

The **"Total" column of the Canvas grade book may at times be inaccurate** but you can contact Dr. Hudgins (the course coordinator, thudgins@ku.edu) at any time with questions. Dr. Hudgins will hold additional office hours before drop dates to meet with students and discuss grades.

2.2 Textbook & Materials

Textbook: Calculus Early Transcendentals, 4E, by Rogawski & Adams

Other Material Needed:

Achieve and iClicker App:

* Achieve is the online homework platform and is accessed through **Canvas**.
* iClicker is used in **lecture** to take attendance and collect your answers to questions.
* You will have access to Achieve, iClicker and the E-book through "Auto access" on Canvas.
* Make sure to **use your KU email** in Achieve and iClicker. By doing so, you should be auto-enrolled in the appropriate iClicker course for your lecture section. When registering for Achieve, you may notice a "Willolabs" email address; this is **correct** and you should NOT change it. This protects your data.
* Visit https://www.iclicker.com/students/apps-and-remotes/apps to download the iClicker app. (You may also purchase a physical iClicker remote, if not using a smartphone, tablet, or laptop in class.)

Zoom App: All classes and the Help Room are in-person but some of the instructors will hold office hours on Zoom, as needed.

Calculators and Midterms/Final Exams: **Only basic or scientific calculators** will be permitted while taking exams. Calculators must not be able to perform calculus calculations (limits, derivatives, integrals, series) and must have no graphing capabilities.

2.3 Assessment and Withdrawal Dates

Exam	Day	Date	Time	Content
Midterm 1	Tuesday	February 28th	5:50-7:50 PM	Sections 2.1-2.5, 2.7-2.8, 3.1-3.3, 3.7-3.8
Paper Gateway	Wed or Thurs	Lab 3/8 or 3/9		Derivative Rules
Midterm 2	Tuesday	April 11th	5:50-7:50 PM	Sections 2.6, 3.1-3.10, 4.1-4.6
Final Exam	Thursday	May 11th	4:30-7:00 PM	Cumulative

Day	Date	Type
Monday	February 6th	Last day to withdraw/drop without a "W"
Monday	April 17th	Last day to withdraw from a class or the University

2.4 Grading System

A	B	C	D
$\geq 88\%$	$\geq 76\%$	$\geq 64\%$	$\geq 52\%$

Note that there are no plus/minus grades in the calculus sequence, and there will not be a curve.

Many assignments and assessments will have extra credit opportunities.

The following is a breakdown for Math 125 showing the components of the course and how much each component is worth.

Final Exam	25%
Midterm 1	20%
Midterm 2	20%
Gateway	10%
Achieve Homework	9%
Lab Worksheets	8%
Lab Attendance	2%
iClickers (Includes Lecture Attendance)	4%
In-Class Quizzes	2%
Practice Quizzes and Surveys	2%

2.5 Grade Disputes

All graded material will be become available under the laboratory section's Canvas page. You can view the feedback by clicking on the grades. The instructors of Math 125 will check the grading of any assignment if the assignment was graded within the past two weeks; after two weeks, the instructors are not obligated to check the grading of an assignment. Initially contact your GTA before contacting your lecturer for any grade disputes.

2.6 The Structure of Lecture Sections

They are taught in the auditoriums. iClicker is used to take attendance. You may print the lecture notes on the week's Canvas module before the class, if desired.

2.7 The Structure of Laboratory Sections

Laboratory sections meet twice per week with a graduate teaching assistant (your lab either meets on MW or TuTh). Very little to no lecturing is expected in the lab sections. Students will review the most recent material in small groups, work through problems that supplement lecture material, and have an opportunity to ask questions and receive feedback in a small classroom environment. 2% of the final grade is earned through laboratory sections' attendance and participation; 8% of the final grade is earned for completing select problems on the worksheets correctly. The in-class quizzes and paper Gateway exam will be proctored during your laboratory meetings. Print the worksheets before the lab section, if possible, or write the questions down. You must also arrive on time; students marked "late" may not be allowed to sit for a quiz or exam happening in lab that day.

2.8   The Lecture and Lab Participation

Lecture Participation

The attendance in Lecture is taken using iClicker (smartphone app or remote).

If you answer any iClicker question during a lecture, you will earn 1 point for participation for entire session (this is one time only in each class). For each question that you answer correctly, you will earn an additional 0.5 points.

iClicker points will be scored out of 75 total. However, you will have the opportunity to earn up to 90 iClicker points (the cut off for extra credit) and there are approximately 100 iClicker points provided in the semester.

It is recommended that you download the app to a smartphone or tablet. Make sure to use your KU email to register, as you should then be autoenrolled in the appropriate iClicker course for your lecture section. https://www.iclicker.com/students/apps-and-remotes/apps

Laboratory (Recitation) Participation

Lab instructors will take attendance each lab period and students will receive 1 point for each lab period that they are present, on time, and participating.

Instructors may mark a student "late" on Canvas for arriving more than 10 minutes late or leaving early (see below for policy). Instructors also reserve the right to mark a student "late" on Canvas if they refuse to participate in group activities while in lab. Any time a student is marked "late," they receive 0.5 points for the day's attendance.

If students are absent (and unexcused), they will receive 0 points for the day's attendance.

2.9   The Gateway Exams

Additional information regarding the Gateway exam can be found on Canvas.

Students can earn a **score of either 0, 5, or 10 out of 10** on the Gateway (there are no other grades available). Students may retake the Gateway Exam as many times as they would like while the Gateway Exam is open; the highest grade earned will be counted.

- A **full pass** of 10/10 is a Gateway Exam with 8, 9, or 10 questions completely correct.

- A **partial pass** of 5/10 is a Gateway Exam with exactly 7 questions completely correct.

- A **no pass** of 0/10 is a Gateway Exam with 6 or less questions completely correct.

Students earn credit by passing either the paper (written) Gateway Exam or the computerized Gateway Exam retakes.

A paper (written) Gateway Exam will be administered in laboratory (recitation) sections during the second lab section of Week 8 (3/8 or 3/9). Students who earn a full pass do not need to retake the computerized Gateway Exam. Students who earn a partial pass or no pass make retake the Gateway Exam.

Students who need to retake the computerized Gateway Exam will have opportunities to do so for the next two weeks, M-F from tentatively 1-5 pm. Exams will begin on the hour. Information about the computerized Gateway Exams, including deadlines and location, will become available on the Canvas course.

2.10 Structure of Assignments and Assessments

Lab Worksheets	Worksheet assignments are posted to the Lab Canvas weekly. Students are expected to have a copy of this worksheet or the problems when they arrive in lab each week. Students will work in small groups and with their lab instructor to complete the worksheet. Students will receive up to 1 point for completing the worksheet, if clear effort to complete all problems is shown. Completion grade is assigned 0.5 points if the worksheet is started but incomplete, and 0 points if the worksheet is not begun or if there is no work shown for answers given. Students must upload their individual worksheet as a PDF to Canvas by 11:59 pm on Friday each week. Some problems are marked with point values and will be graded for accuracy. There will be seven or more points available on each worksheet, but they will be graded out of an expected seven points. Any additional earned are extra credit. **Late policy**: Late worksheets will not be accepted. Instead, one worksheet will be dropped from the final grade.
Achieve Homework	Find a link on the week's Canvas module. Achieve homework gives you instant feedback. You have 10 attempts for each question and no penalty for incorrect attempts before entering the correct answer. **Late policy**: Late Achieve homework assignments will not accepted. However, most of these will reopen on Monday, April 24 for Final Exam studying and students may use remaining attempts to earn up to full credit at this time.
Practice Quizzes	These are low-stakes extra credit assignments that **may** help prepare you for exams. These are available through Canvas. You have 10 attempts for each question and no penalty for incorrect attempts before entering the correct answer. **Late policy**: Late Practice Quizzes will not accepted. However, most of these will reopen on Monday, April 24 for Final Exam studying and students may use remaining attempts to earn up to full credit at this time.
In-class Quizzes	These are low-stakes assessments that **may** help in reducing the testing anxiety for other assessments by giving you practice. Each covers 2-3 sections of the book. **Makeup policy**: There will not be any makeup quizzes administered. Instead, the lowest quiz grade will be dropped from the final grade.
Gateway Exam	Each exam contains 10 questions on taking derivatives. Full Pass score is 80% or higher and full points will be awarded. Partial Pass score is 70% and half points will be awarded. Any score below 70% is awarded zero points. A paper Gateway exam will be given during your lab in Week 8 (3/8 or 3/9). If you didn't pass the paper Gateway, multiple computerized retakes will be available in Weeks 9-10 in Snow 159.
Midterm & Final Exams	They are administered in the evening. There will be additional review sessions and practice exams available.

3 Math 125 Resources Outside the Classroom

3.1 Math Help Room

Every instructor and graduate teaching assistant is available for help outside the classroom, as listed above. The Math Help Room is in Snow 651 and is staffed by mathematics graduate teaching assistants. Before searching for a private tutor , be sure to visit either your instructor or the Mathematics Help Room as they are free for KU students. The schedule for the Help Room will be posted on Canvas in the second week of classes; it will be open in the afternoons.

3.2 Supplemental Instruction (SI)

Supplemental Instruction, or SI, is available for this class. SI Leaders are students who have previously taken this class and now, as SI Leaders, they attend the class lectures and lead engaging and activity-based study sessions to review course material outside of the classroom. The sessions are free, voluntary, provide an opportunity for students to meet other students in class, discuss important concepts, and develop effective study strategies. Data has shown that students who regularly attend and actively participate in SI Sessions have the potential to do well on exams and receive strong overall grades in their course. Specific information about SI for this course including the days, times, campus locations of the SI Sessions be announced the second week of classes and from there will be posted on our course Canvas page. For more information about SI, visit the Academic Learning Center website at http://learning.ku.edu and click on Supplemental Instruction from the main menu. The SI Leaders for MATH 125 this semester are Beth, Emina, and Shayeera.

3.3 Group Work and Tutors

Students may discuss homework/worksheet problems in groups, but each student is responsible for doing their own work and for turning in individual solutions. When a student works with a tutor, it is the responsibility of both the student and the tutor to ensure that it is the student who works to arrive at the solution of the problems. Tutors should not do student homework or provide solutions for assignments. Members of the class are encouraged to study together, but EACH must write out their own solutions to the assigned problems. Copying of another person's homework is not allowed. Homework is a major part of the learning process in mathematics. It is essential that you work on problems on your own and do the homework on a regular basis.

4 Course Content

4.1 Prerequisites

MATH 103 or MATH 104, with a grade of C- or higher; or 3 years of college preparatory mathematics including trigonometry, with a score of 28 or higher on the ACT Mathematics exam.

4.2 Learning Objectives and Course Content

The course covers differential calculus and the basics of integral calculus, covering most of Chapters 2-5 of the text. The precise sections to be covered are listed in the schedule given on Canvas. The objective of the course is to acquire mastery of the material covered in the course in the following senses:

1. Mathematical understanding, as demonstrated by the ability to solve appropriate mathematical problems.

2. Practical understanding, as demonstrated by the ability to solve appropriate word problems in the sciences, in engineering and in the social sciences.

4.3 Course Goals and Topics

By the end of Math 125, students should have begun to build fundamental knowledge and skills so they can apply calculus to future STEM academic training and professional practice. Fundamental calculus knowledge and skills will be learned and evaluated based on specific objectives related to:

Limits

- Have an intuitive understanding of the definition of a limit.
- Evaluate limits (two-sided, left, and right) of a piecewise defined function given algebraically or graphically.
- Calculate infinite limits and detect vertical asymptotes.
- Detect when a function is continuous and identify the type of discontinuity.
- Apply the Intermediate Value Theorem to mathematically prove two functions intersect on a particular interval.

Derivatives

- Apply limits to calculate the slope of a tangent line or an instantaneous velocity.
- Understand how the first and second derivative affect the shape of a functions graph.
- Compare the different differentiation formulas and recognize when to use each.
- Understand the connection between implicit differentiation and the chain rule.
- Find the slopes of implicitly defined functions.
- Apply implicit differentiation and the chain rule to solve many types of related rates problems.
- Apply L'Hôspital's Rule to calculate limits of various indeterminate forms.
- Calculate the derivative of any elementary function.
- Recognize when to apply logarithmic differentiation.
- Use the tangent line or differentials to estimate how a function is changing around a specific point.
- Use the Closed Interval Method to identify absolute maxima and minima of a function.
- State the Mean Value Theorem and intervals for which a function satisfies it.
- Identify local extrema using either the First or Second Derivative Tests.
- Summarize all your current algebra and calculus knowledge to sketch an accurate graph of a function.
- Apply your maxima/minima knowledge to solve optimization problems.
- Recognize how and why Newton's Method can approximate the roots of differentiable functions.

Integrals

- Compute general antiderivatives for select elementary functions.
- Solve initial value problems for using antiderivatives.

- Use antiderivatives to calculate velocity or position from acceleration.

- Estimate the area under a curve using rectangles with heights given by left, right, or midpoints.

- Identify how the definite integral relates to area under the curve.

- Manipulate integral expressions using the basic properties of the integral.

- Relate slopes and areas through the Fundamental Theorem of Calculus.

- Develop a substitution rule to find antiderivatives of more complicated functions.

4.4 Keys to Success in Math 125

- Join your lecture and your laboratory section prepared to learn and engage with the material! Watch the videos (as available) if you need help.

- After each class, review the material and do the assigned work and suggested homework in the textbook.

- Prepare for the next class meeting:

  - Visit Canvas to check the schedule and announcements.

  - Print the pre-lecture notes and the lab worksheets at the beginning of each week.

  - Read the upcoming section in the textbook.

- Find help! Take advantage of both your lecturer's and your laboratory instructor's office hours. Visit the Math Help Room. Attend SI sessions. The help room schedule and the SI schedule can be found on the course Canvas page.

- Study! Gather a group of friends and regularly work and study together using the Help Room or your Lab Teams.

- You will need a good background in algebra, and trigonometry. Chapter 1 can serve as an excellent reference for reviewing prerequisite material and doing practice problems.

4.5 General Comments on Study Habits

Regular class attendance is important for success in this course. Even if you've taken a previous Calculus course, this course is likely to be taught from a more sophisticated perspective, and if you think this class will be review, you are probably mistaken. You should expect to spend **at least two hours** studying outside of class **for every hour** spent in class; this includes your homework time. In contrast to most high school math classes, if you don't understand the topics being covered, you should NOT assume that your instructor will repeat material until you understand or master it. Ideally, you should ask questions at the time in class. Of course, you will also need to spend time thinking things through on your own, but if you've tried that and are still confused, make use of the Math Help Room (Snow 651) and instructor office hours. Don't wait! Mathematics is cumulative, so anything you don't understand now is likely to keep giving you trouble as the semester goes on. That said, mathematics does take time to learn and your assignments are staggered to generally give you at least a week to learn specific skills.

5 Additional KU Policies

5.1 Diversity and Inclusion

All students are welcome in this course, regardless of age, ability, background, belief, ethnicity, gender, gender identity, gender expression, religious affiliation, sexual orientation, and socioeconomic status. Instructors and students are both expected to contribute positively to an environment that respects the identities of others and welcomes diversity. If you are experiencing discrimination and/or harassment, please consider reaching out to any of your specific instructors or to the course coordinator (thudgins@ku.edu). If your instructor or coordinator is causing you harm and you do not feel comfortable approaching the individual, there are additional resources on campus to support you, such as:

- Office of Diversity, Equity, Inclusion, and Belonging

- Center for Sexuality and Gender Diversity

- Office of Civil Rights and Title IX

5.2 Policy on Students with Special Needs

The KU Office of Student Access Services (SAC) coordinates accommodations and services for all eligible students with disabilities. If you have a disability and wish to request accommodations, you should contacted SAC as soon as possible (22 Strong Hall; 785-864-4064 ; http://access.ku.edu/). We also recommend that you contact your instructor and graduate teaching assistant privately in regard to your needs in this course.

5.3 Religious Holidays

Any student in this course who plans to observe a religious holiday which conflicts in any way with the course schedule or requirements should complete the relevant forms at https://diversity.ku.edu/religious-observances with the Office of Diversity, Equity, Inclusion & Belonging and contact the course coordinator (Dr. Hudgins, thudgins@ku.edu) **before the end of the third week of classes** to discuss alternative accommodations.

5.4 Excused Absences and Making Up Missed Work

Students with a conflict with another course or verifiable excuse, temporary orders necessitating the absence of those in the US Armed Forces, sanctioned university activities, or a medical crisis of themselves, a relative, or friend may be excused from being present. It is the responsibility of the student to initiate discussion with their instructor or graduate teaching assistant prior to the absence examination/test if possible. Students can formally request their exam to be rescheduled due to a conflict by completing an Exam Conflict form which will be shared approximately a week before the exam is scheduled.

5.5 Policy on Academic Misconduct

You are required to abide by all KU policies on academic integrity. Cheating, plagiarism or other academic misconduct will result in a failing grade on the assignment in question, notification of the student's dean, and usually further disciplinary sanctions, possibly including a failing grade in the course. You are encouraged to collaborate with other students on the homework assignments. However, each student must write up his or her own solutions and acknowledge all collaborators. Copying someone else's homework,

or allowing someone else to copy yours, is considered to be a form of cheating. For more information, see KU's official policies on academic misconduct at http://policy.ku.edu/governance/USRR#art2sect6.

5.6   Intellectual Property

- Course materials prepared by the instructor, together with the content of all lectures and review sessions presented by the instructor are the property of the instructor.

- Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited.

- Permission to make such recordings may be granted by the instructor on a case-by-case basis, on the condition that the individual making the recording uses these recordings only as a study aid.

- Unless explicit permission is obtained from the instructor, recordings of lectures and review sessions and course content may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.

5.7   Commercial Note Taking

Pursuant to the University of Kansas' Policy on Commercial Note-Taking Ventures, commercial note-taking is not permitted in Math 125. Lecture notes and course materials may be taken for personal use or for the purpose of mastering the course material, and may not be sold to any person or entity in any form. Any student engaged in or contributing to the commercial exchange of notes or course materials will be subject to discipline, including academic misconduct charges, in accordance with University policy. Please note: note-taking provided by a student volunteer for a student with a disability, as a reasonable accommodation under the SAC, is not the same as commercial note-taking and is not covered under this policy.

5.8   Policy on Mask Wearing

Students are expected to comply with the most current University policy.

5.9   KU Firearm Policy

Individuals who choose to carry concealed handguns are solely responsible to do so in a safe and secure manner in strict conformity with state and federal laws and KU weapons policy. Safety measures outlined in the KU weapons policy specify that a concealed handgun:

- Must be under the constant control of the carrier.

- Must be out of view, concealed either on the body of the carrier, or backpack, purse, or bag that remains under the carrier's custody and control.

- Must be in a holster that covers the trigger area and secures any external hammer in an un-cocked position

- Must have the safety on, and have no round in the chamber.