

SYLLABUS Spring 2024
The University of Iowa
The College of Liberal Arts and Sciences
Department of Mathematics
Engineer Math I Single Variable Calculus, MATH:1550:0AAA
9:30 am - 10:20 am, MWF in 107 EPB

Prerequisites: (MATH:1010 with a minimum grade of C- and MATH:1005 with a minimum grade of C-) or MPT Level 3 score of 9 or higher or ALEKS score of 75 or higher or (MATH:1380 with a minimum grade of C- and MATH:1010 with a minimum grade of C-) or MATH:1020 with a minimum grade of C- or MATH:1460 with a minimum grade of C- or (MATH:1010 with a minimum grade of C- and ALEKS score of 55 or higher) or (MATH:1340 with a minimum grade of C- and MATH:1010 with a minimum grade of C-)

Approved GE: Quantitative or Formal Reasoning

The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the add and drop deadlines, the “second-grade only” option (SGO), academic misconduct policies, and other undergraduate policies and procedures. Other UI colleges may have different policies.

Instructor: Valentyna Bezugla

Office location and hours: 325G MLH,

Student drop-in hours: MTW 11:00 am – 12:00 pm.

I am also available by appointment if you are unable to attend my drop-in hours.

E-mail: valentyna-bezugla@uiowa.edu

Discussion Sections:

Section 0A01

11:00 am -11:50 am, TTh in 205 MLH

TA: Dylan Johnson

dylan-johnson@uiowa.edu

Section 0A03

3:30 pm - 4:20 pm TTh in 105 MLH

TA: Brooke Burson

brooke-burson@uiowa.edu

Section 0A04

12:30 pm -1:20 pm TTh in 105 MLH

TA: Joseph Baroni

joseph-baroni@uiowa.edu

DEO Contact Information: Dr. Ryan Kinser, 14 MLH, ryan-kinser@uiowa.edu

Catalog Description of the Course

This is the first semester of a five-semester mathematics sequence for engineering students, but not

restricted to engineering students. This course is a redesigned version of a traditional first-semester calculus course with a little more emphasis on techniques of integration. The course is taught by a faculty member in a lecture of about 120 students meeting three times a week and with two one hour discussion sections taught by a TA. Students are encouraged to use the Math Tutorial Laboratory for additional help.

This course covers the basics of single variable differential and integral calculus. Mastery of this material is essential for the study of Engineering Math. The content of the course was crafted by the College of Engineering and the Department of Mathematics.

When you finish this course, you will have a very good idea of how functions behave, understand what it means to find slopes of their tangent lines and areas beneath curves. You will be able to perform the computations common to calculus: finding derivatives and anti-derivatives (integrals). Especially useful functions, in particular exponential, polynomial, and trigonometric functions will be in our focus.

Engineering Math I course satisfies the General Education Requirement in Quantitative or Formal Reasoning. The course develops the analytical powers and skills of the student.

Course Structure

This course meets in lecture three days per week and in a discussion section two days per week. Our goal is to use active learning techniques to help you master the material. During the lecture periods, we will be discussing new material. You will be answering questions using Top Hat platform. During discussion sections, you will be working together with your classmates to complete worksheets and clarify important points made during the previous one or two lecture periods. The lectures and discussion sections are designed to complement each other. Therefore, it is expected that you attend and participate fully in both.

Discussion Sections

Each discussion section is led by a teaching assistant (TA) and meets two times per week on Tuesdays and Thursdays. You should be enrolled in one and only one discussion section. Discussion section gives a good opportunity for you to ask questions in a smaller class setting and is designed to help you practice the material discussed in lectures.

Objectives and goals of the course

Students completing this course will understand limits, derivatives and integrals, and will be able to apply these concepts to real life problems, which often arise in natural sciences. The course will prepare you for the other course that use these basic concepts.

Textbook

Mylab Math With Pearson Etext -- 18-week Access Card -- For Thomas' Calculus: Early Transcendentals Required
ISBN: 9780137559794
Author: Joel Hass

Publisher: Pearson ©2022

Approximately \$67.19 will be billed to your U-Bill

We will use the online edition with the MyLab Math exercises, which is available through ICON.

Top Hat Classroom Pro (1 Term) Required

ISBN: 1218202000001

Author: Top Hat

Publisher: Top Hat ©2020

Approximately \$15.00 will be billed to your U-Bill

Material to be covered from the Text:

We will discuss the material from the following chapters.

Chapter 1: Basic properties of a list of functions studied in the course including exponential, logarithmic and inverse functions;

Chapter 2: Limits, one-side limits, infinite limits and limits at infinity; vertical and horizontal asymptotes; precise definition of limits and continuous functions; using Intermediated Value Theorem to approximate roots; tangent lines and derivatives;

Chapter 3: Differentiation; product, quotient and chain rules; implicit differentiation; linear approximation; related rates and exponential growth;

Chapter 4: Extreme values; monotonicity, concavity and graphing of functions; Mean Value Theorem and L'Hospital's Rule; applied optimization; antiderivatives;

Chapter 5: Riemann integrals and approximations of integrals by midpoint rule etc; Fundamental Theorem of Calculus and substitution rule; indefinite integrals;

Chapter 6: Areas and volumes of revolution;

Chapter 8: Techniques of integration.

Course Grades

Final course grades will be assessed based on the homework, quizzes, midterm exams, the final exam, and course response as follows:

10% Homework, assigned weekly

15% Quizzes, about every week except the weeks of the exams

20% Midterm exam 1

20% Midterm exam 2

30% Final exam

5% Class participation (over Top Hat)

As the class progresses, all grades will be posted on ICON

Grading System

Letter grades at the end of the course will be determined by the final weighted score as computed using the above percentages. A +/- grading scheme will be used. Cutoff scores for the different letter grades will not be lower than the following

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>99	>94	>90	>85	>80	>75	>70	>60	>55	50 - 55	< 50

The instructor reserves the right to adjust these cutoffs if there are reasons to do so.

Homework: Homework will be assigned weekly on ICON via MyLab Math Homework and usually due the following week. The two lowest homework scores will be dropped at the end of the semester.

Quizzes: The quizzes will be given in discussion sections, and will be based on the previous homework. The two lowest quiz scores will be dropped at the end of the semester.

Examinations:

There will be two 90-minute evening midterm exams and a cumulative final exam.

Midterm Exam 1: Thursday, February 22, 6:30 pm – 8:00 pm

Midterm Exam 2: Thursday, April 4, 6:30 pm – 8:00 pm

Final Exam: Date, time and place to be announced

All exams and quizzes are closed-book, closed-notes.

Suggested study techniques for the exams are for the student to complete all the assigned homework and quizzes.

Calculators

No calculators or other hand-held electronic devices are allowed on exams. Exams are written in such a way that a calculator is not necessary.

Attendance and class participation

Attending and participating in class activities will increase your chances of doing well in the course. During the lectures, you will be using your **Top Hat** account to indicate you are attending and to *answer questions* about the lecture material. You will earn points for each question you answered.

Date and Time of the Final Exam

The [final examination date and time](#) will be announced by the Registrar generally by the fifth week of classes and it will be announced on the course ICON site once it is known. *Do not plan your end of the semester travel plans until the final exam schedule is made public. It is your responsibility to know the date, time, and place of the final exam.* According to Registrar's final exam policy, students *have a maximum of two weeks after the announced final exam schedule* to request a change if an exam conflict exists or if a student has more than two exams in one day (see the [policy](#)).

Course policies:

Academic Honesty and Misconduct

All students in CLAS courses are expected to abide by the [CLAS Code of Academic Honesty](#). Undergraduate academic misconduct must be reported by instructors to CLAS according to [these procedures](#).

Rules on student collaboration

Students are encouraged to discuss homework.

However, *all homework submitted must be your own work*. No material in a quiz or exam

can be discussed with other students while the quiz or exam is in progress.

Student Complaints

If you have a complaint, I would appreciate you coming to me about it first, so that we can create a way of overcoming the difficulty. If we are unable to resolve the problem, you can discuss it with the Chairman of the Department. In summary, the chain is: your instructor, then the Chairman of the Department of Mathematics Dr. Ryan Kinser, and then an appropriate Dean. The Department of Mathematics has offices in 14 MLH. To make an appointment contact the departmental secretary in 14 MLH. Undergraduate students should contact [CLAS Undergraduate Programs](#) for support when the matter is not resolved at the previous level.

Drop Deadline for this Course

You may drop an individual course before the deadline; after this deadline you will need collegiate approval. You can look up the [drop deadline for this course](#) here. When you drop a course, a “W” will appear on your transcript. The mark of “W” is a neutral mark that does not affect your GPA. Directions for adding or dropping a course and other registration changes can be found on the [Registrar’s website](#). Undergraduate students can find policies on dropping and withdrawing [here](#).

Absences

Students are recommended to use [this form](#) to share the reason for an absence. The form can be found on ICON under the **Student Tools** tab at the top of the page. We can discuss the form together so that expectations for work missed during absences are clear.

Make-up policy

[University regulations require that students be allowed to make up examinations](#) that have been missed due to illness, religious holy days, military service obligations (including service-related medical appointments), or other unavoidable circumstances or University-sponsored activities. Students with UI-authorized activities must discuss the absences with the instructor as soon as possible. Religious obligations must be communicated within the first three weeks of classes.

Additional Notes to Students

1. I am planning to use ICON for posting grades and other course material. Also, some announcements may be e-mailed through ICON to your UI e-mail. Check ICON and your UI e-mail regularly, and make sure that UI has your correct e-mail address.
2. This course plan may be modified during the semester. All changes will be announced in class in advance. It is solely the student’s responsibility to be informed of such announced changes.

Communication: UI Email

Students are responsible for all official correspondences sent to their UI email address (uiowa.edu) and must use this address for any communication with instructors or staff in the UI community. For the privacy and the protection of student records, UI faculty and staff can only correspond with UI email addresses.

Resources for Students

Math Tutorial Lab, 125 MLH <http://www.math.uiowa.edu/math-tutoriallab>

[Engineering Tutoring](#) provides group tutoring to students taking foundational and core course in the Engineering curriculum. Starting Sunday, January 21, Engineering Tutoring will provide FREE tutoring Sunday-Thursday from 6:00-9:00pm in 3612 SC.

24/7 Pearson Tech support <https://support.pearson.com/getsupport/s/>

Mental Health Resources and Student Support

Students are encouraged to be mindful of their mental health and seek help as a preventive measure or if feeling overwhelmed and/or struggling to meet course expectations. Students are encouraged to talk to their instructor for assistance with specific class-related concerns. For additional support and counseling, students are encouraged to contact University Counseling Service (UCS). Information about UCS, including resources and how to schedule an appointment, can be found at counseling.uiowa.edu. Find out more about UI mental health services at mentalhealth.uiowa.edu.

[Student Care and Assistance](#) provides assistance to University of Iowa students who are experiencing a variety of crisis and emergency situations, including but not limited to medical issues, family emergencies, unexpected challenges, and sourcing basic needs such as food and shelter. More information on the resources related to basic needs can be found at basicneeds.uiowa.edu/resources/. Students are encouraged to contact Student Care & Assistance in the Office of the Dean of Students (Room 135 IMU, dos-assistance@uiowa.edu, or 319-335-1162) for support and assistance with resources.

University Policies

[Accommodations for Students with Disabilities](#)

The University is committed to providing an educational experience that is accessible to all. If a student has a diagnosed disability or other disabling condition that may impact the student's ability to complete the course requirements as stated in the syllabus, the student may seek accommodations through [Student Disability Services](#) (SDS). SDS is responsible for making Letters of Accommodation (LOA) available. The student must provide an LOA to the instructor as early in the semester as possible, but requests not made at least two weeks prior to the scheduled activity for which an accommodation is sought may not be accommodated. The LOA will specify what reasonable course accommodations the student is eligible for and those the instructor should provide. Additional information can be found on the [SDS website](#)

[Classroom Expectations](#)

[Free Speech and Expression](#)

[Non-discrimination](#)

[Absences for Religious Holy Days](#)

[Sexual Harassment/Misconduct and Supportive Measures](#)

[Sharing of Class Recordings](#)