

Elements of Calculus (Math 180 - 02)

3 Credit Hours – Fall Semester 2024 – August 19th through December 11th, 2024.

INSTRUCTOR INFORMATION

Primary Instructor
<p>Matt Scobee, Ph.D. (Pronouns: he, him, his) matt.scobee@louisville.edu</p> <p>Department of Mathematics Natural Sciences Building Belknap Campus University of Louisville Louisville, KY 40292</p> <p>Office: TBD (the NS building is being renovated this semester)</p>
<p>Student drop-in hours: My student drop-in hours are:</p> <ul style="list-style-type: none"> • In-person: Monday, 12:30 pm – 1:30 pm, location: TBD • Online: Tuesday, 9:00 am – 10am, on MS Teams. <p>If you cannot make it to my regularly scheduled drop-in hours, please email me to set up another time that works for us both.</p>
<p>About your instructor: I started college as “undecided” (i.e. I didn’t declare a major) and, after about a year, I decided to be a math major, mainly because I was intrigued by the challenge of the subject (initially I took Calculus I because I wanted to see why everyone thought it was so difficult!), but also because I thought there’d be less competition once I graduated. Unfortunately, “liking the challenge” wasn’t enough. I struggled through my first few math courses until I figured out an approach to studying that worked for me (thanks to my pre-med roommate). Once I figured out how to study, my grades improved quite a bit, I got back on track and graduated, and went on to and was successful in graduate school. If you’re wondering, honestly, my approach to doing better wasn’t <i>groundbreaking</i>! I made a commitment to always attend class, work (and rework) lots of problems (you must <i>do</i> math to <i>learn</i> math), and I made sure that I promptly asked questions!</p>
<p>Contacting me via email: I do want to hear from you, and I encourage you to email me. You can email me with questions or just general concerns. I will do my best to respond as soon as possible, usually within 24 hours during the week. Weekends may introduce delays, depending on schedules. If you do not receive a response within 24 hours, please email again. I will appreciate the gentle reminder.</p>

CLASS INFORMATION

Class meetings: Monday & Wednesday, 2:30 pm – 3:45pm, in BAB 130

Mode of Class Delivery: “In-Person (Face-to-Face)” – This course is taught in person in the traditional face-to-face format. Teaching and Learning activities will take place in the classroom. Part of your course grade is determined by the completion of work done in class, but your homework assignments will be submitted online.

Recitation: This course includes a required 1-hour period of recitation. Your participation in recitation will contribute to your overall course success. Your recitation instructor will be monitoring and recording your progress in the course. They are here to instruct and guide you to success as well as answer questions that come up throughout the semester. Please contact ***the instructor assigned to your section*** for questions about grades, deadlines, homework, additional help/practice, or concerns about your progress in the course.

Section	Day & Time	Room	Instructor	Email
02A	Wed, 12:00 – 12:50 pm	BAB413	Alex Blose	alexander.blose@louisville.edu
02B	Wed, 12:00 – 12:50 pm	BAB239A	Jaime Araujo Saenz	jaime.araujosaenz@louisville.edu
02C	Wed, 1:00 – 1:50 pm	BAB408	Alex Blose	alexander.blose@louisville.edu
02D	Wed, 1:00 – 1:50 pm	BAB412	Jaime Araujo Saenz	jaime.araujosaenz@louisville.edu

COURSE DESCRIPTION

Differential and integral calculus of polynomial, logarithmic, and exponential functions with applications.

CARDINAL CORE LEARNING OUTCOMES AND ASSESSMENT

Quantitative Reasoning is concerned with solving real-world problems through mathematical methods. Students who satisfy this requirement will demonstrate that they are able to do all the following:

1. Interpret information presented in mathematical and/or statistical forms.

Assessment: For problems in this course both the given information and the required solution involve mathematical formulas, graphs, and/or tables. Students must be able to interpret them to set up the model and are often asked to draw conclusions from the solutions they obtain.

2. Illustrate and communicate mathematical and/or statistical information symbolically, visually, and/or numerically.

Assessment: Students are required to set up and solve problems using appropriate methods involving algebra, geometry, calculus, and other mathematical methods.

3. Determine when computations are needed and execute the appropriate computations.

Assessment: Students will be required to show an understanding of methods used in computing solutions.

4. Apply an appropriate model to the problem to be solved.

Assessment: Students are required to set up and solve application problems that require the selection and use of appropriate calculus, algebraic, and geometric models.

5. Make inferences, evaluate assumptions, and assess limitations in estimation, modeling, and/or statistical analyses.

Assessment: Students are asked to solve problems that require them to infer reasonableness of solutions and to demonstrate correctness and completeness of solutions.

One of the goals of this course is to develop critical thinking and effective communication skills, especially relating to technical mathematical material. You will develop these skills through guided readings, exercises, exams throughout the course along with discussions with other class participants. Your mastery of these skills will be assessed via quizzes and tests.

PREREQUISITES

Appropriate placement score or equivalent coursework. Note: Does not count toward mathematics major or minor. Note: Credit not allowed for both MATH 180 and MATH 205. If you are not sure whether this course is appropriate for your academic program, please carefully consult with your program's advisors to confirm that it is.

ASKING QUESTIONS

The course discussion board (on Blackboard) will be our primary form of communication when asking general questions about course content. The main reason for this approach is that if you have a question, then one of your classmates likely has the same question. Using this

approach allows all students to benefit from any discussion related to questions about course content. Our TAs will monitor the discussion board throughout the week and will let me know if there are any questions that I need to address. Also, if you see a question on the discussion board and you know the answer or can add to the discussion, please do!

Please remember that anything posted to the discussion board is viewable by the entire class. If you have a private matter that you'd like to discuss with either me or one of the TAs, please use email, student drop-in hours, or an appointment for that discussion.

Also, along those lines, please remember that you are encouraged to take advantage of student drop-in hours!

MATERIALS

Required textbook/courseware

Access to digital courseware is required for this class. *This class is part of the UofL ACCESS program and has the digital courseware built into the cost of the class. The cost of the courseware has been negotiated with the textbook vendor to secure the lowest possible price. For more information about the UofL ACCESS program as well as the opportunity to opt out and purchase the digital courseware on your own, please visit <https://louisville.edu/provost/undergraduate-affairs/follett-access-1/follett-access>.*

Calculator

Students are expected to have, and to be able to use, a calculator with algebraic logic (usually indicated by parenthesis keys), an exponential key, and logarithmic keys. Any such Scientific Calculator will suffice. It is the student's responsibility to provide their calculator, have fresh batteries in same, and know how to use the calculator. **Graphing calculators, programmable calculators, cell phones, tablets, and other similar devices must be stored away (i.e. out of sight) during all proctored exams.**

TECHNOLOGY EXPECTATIONS

Because most of your assignments are submitted online, you will need to have access to a computer with a reliable high-speed internet connection. If you do not have access at home, you may be able to use a public library or come to campus to use computers in the library or one of the IT student computer labs. Make sure that you have access several hours per day. For your privacy and security, only your official U of L email account will be used for email communication. FERPA law does not allow for communication or information to be sent to personal email accounts. Please check your UofL email daily.

STUDENT ACTIVITIES AND EXPERIENCES

Your instructors will discuss major concepts and work problems, but the student is expected to ask questions and engage appropriately with the material ahead of time. Additionally, all students are expected to:

- Participate in class and/or group activities.
- Read assigned materials and/or watch videos as well as study content uploaded to Blackboard.
- Communicate with your recitation instructor; ask questions when something is unclear.
- Submit assignments on time.
- Complete assignments in MyLab. Plan ahead so that you know you have plenty of time to complete them.

STUDENT EVALUATION

You will be evaluated in the course based on your average of MyLab assignments, in-class activities, and exams according to the weights below:

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|-----------------------|------|---|
| • Exams | 30 % | (4 Chapter Exams weighted equally) |
| • In-Class Activities | 15 % | (actively engaged participation/completion) |
| • MyLab assignments | 55 % | (all assignments weighted equally) |
| <u>TOTAL</u> | 100% | |

Semester Grades:

Letter grades on the +/- scale will be assigned for this course according to this scale:

Guaranteed Grade Distribution		
98 % for an A+	92 % for an A	90 % for an A-
87 % for a B+	82 % for a B	80 % for a B-
77 % for a C+	72 % for a C	70 % for a C-
67 % for a D+	62 % for a D	60 % for a D-

Please note that all grades will be recorded in the Blackboard gradebook. ALEKS also has a gradebook and I will manually copy grades from ALEKS to Blackboard throughout the semester. You are encouraged to verify your grades as well, and if you notice a discrepancy, please send me an email. I am committed to correcting any discrepancies promptly.

Do not assume any curving or additional extra credit will be given.

LATE ASSIGNMENTS

All assignments are generally due no later than Monday at 11:59 pm following the week they are assigned. This may include weeks with holidays, so it makes sense for you to plan ahead and spend time working on objectives regularly. Late assignments MAY be considered with some penalty at the discretion of your instructor, but late assignments are problematic and can hinder your learning while limiting our ability to provide you with feedback to help guide you to success.

CAREGIVER POLICY

I have a great deal of respect for students who are balancing their pursuit of education with the responsibilities of caring for children or other family members. If you run into challenges that affect your ability to meet class deadlines, or if your caregiving responsibilities are interfering with your ability to engage in this class, please contact me or the TAs. There may be some avenues for flexibility that we can offer to support your learning.

SCHOOL-LIFE CONFLICT

Sometimes students face obstacles to their education as a result of work, family obligations, or unexpected personal difficulties. If you are actively experiencing challenges that are impacting your ability to succeed in this course, please reach out to me or your TAs immediately so that we can work together to form a plan for your academic success. If you are unable to attend student drop-in hours, please email to set up a time that works for you.

ACADEMIC CALENDAR

Class starts	August 19 th , 2024 (Monday)
Last day of registration	August 23 rd , 2024 (Friday)
Last day to drop/add with 100% tuition credit	August 23 rd , 2024 (Friday)
Labor. Day (No Class)	September 2 nd , 2024 (Monday)
Last day to drop with 50% tuition credit	September 10 th , 2024 (Tuesday)
Last day to drop with 25% tuition credit	September 17 th , 2024 (Tuesday)
Fall Break (No Class)	September 30 th – October 1 st , 2024 (Mon-Tues)
Last day to withdraw	October 18 th , 2024 (Wednesday)
Last day of class	December 3 rd , 2024 (Tuesday)

COURSE SCHEDULE

This is the schedule for this course (with a focus on due dates). I don't expect any changes to this schedule but, if there are any, all changes will be announced in class and posted to Blackboard.

Week #	Date	Topics Covered	Textbook
	Before Aug 19	Prepare for class: setup your account for ALEKS	
1	Aug 19	Review/1 st week assignments	Chapter 1
2	Aug 26	Limits and continuity	2.1-2.3
3	Sept 2	The derivative and its basic properties	2.3-2.5
4	Sept 9	Marginal analysis and applications to business	2.6, 2.7
5	Sept 16	Derivatives of exponential and logarithmic functions	3.1, 3.2
	Sept 18	Test 1 given during your recitation meeting	
6	Sept 23	Derivatives of products and quotients and the chain rule	3.3, 3.4
7	Sept 30	Fall break and implicit differentiation	3.5
8	Oct 7	Related rates and elasticity of demand	3.6, 3.7
9	Oct 14	First derivatives and graphs	4.1
	Oct 16	Test 2 given during your recitation meeting	
10	Oct 21	Second derivatives and graphs, L'Hopital's rule, curve sketching	4.2-4.4
11	Oct 28	Absolute maxima and minima, optimization	4.5, 4.6
12	Nov 4	Antiderivatives and indefinite integrals	5.1
13	Nov 11	Integration by substitution	5.2, 5.3
	Nov 13	Test 3 given during your recitation meeting	
14	Nov 18	The definite integral, the Fundamental Theorem of Calculus	5.4, 5.5
15	Nov 25	Area between curves, applications	6.1, 6.2
	Dec 2	Test 4 given on the last day of class	

UNIVERSITY CLOSURES/DELAYS

In case of inclement weather, official announcements will be released on WUOL - 90.5 FM, through the University Information Center (852-5555), and by campus email or by signing up for text alerts through your cell phone (<http://louisville.edu/alert/>).

If the University of Louisville is closed due to a holiday, weather-related conditions or other unusual circumstances, planned real-time activities in classes will not be held. As an alternative, course activity will continue via Blackboard. It is the instructor's responsibility to post instructions for students on Blackboard. It is the students' responsibility to check Blackboard for an update from the instructor. If Blackboard is down, the instructor will communicate a plan via Blackboard as soon as the system is up and running. Continue to complete work as possible until the Blackboard is restored.

If the University of Louisville is on a delayed schedule, on-campus classes are canceled up until a certain time, and classes that begin at or after the delayed time meet at their regular time and include the full instruction period. Coursework is due as planned and should be submitted via Blackboard.

A student will occasionally lose his or her Internet access due to an outage where both the cause and solution are outside of his or her control. Examples include an extended power or cable outage causing a loss in Internet access. It is at the discretion of the course instructor whether to require documentation and to determine a reasonable course of action.

UNIVERSITY GUIDELINES AND POLICIES

Title IX/Clery Act Notification

Sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature) and sex discrimination violate University policies. Students experiencing such behavior may obtain confidential support from the PEACC Center (852-2663), Counseling Center (852-6585), and Campus Health Services (852-6479). To report sexual misconduct or sex discrimination, contact the Dean of Students (852-5787) or University of Louisville Police (852-6111).

Disclosure to University faculty or instructors of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on campus, in a University-sponsored program, or involving a campus visitor or University student or employee (whether current or former) is not confidential under Title IX. Faculty and instructors must forward such reports, including names and circumstances, to the University's Title IX officer.

For more information, see the Sexual Misconduct Resource Guide (<http://louisville.edu/hr/employeerelations/sexual-misconduct-brochure>).

Sexual Harassment

The University of Louisville strives to maintain the campus free of all forms of illegal discrimination as a place of work and study for faculty, staff, and students. Sexual harassment is unacceptable and unlawful conduct and will not be tolerated in the workplace and the educational environment. Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute sexual harassment, even when carried out through computers or other electronic communications systems.

Students and Instructors are protected from Sexual Harassment according to the [Affirmative Action policy](#), the [Student Code of Conduct](#), and the UofL [Computer Account Usage Agreement](#).

Anyone experiencing Sexual Harassment should refer to the links above and/or contact the PEACC Program at 852.2663 and an advocate will explain your choices. This is a free and confidential service.

Academic Dishonesty

Academic dishonesty is prohibited at the University of Louisville. It is a serious offense because it diminishes the quality of scholarship, makes accurate evaluation of student progress impossible, and defrauds those in society who must ultimately depend upon the knowledge and integrity of the institution and its students and faculty. Please respect me, the course, institution, society, and each other by avoiding even the semblance of an impropriety.

Religious Holy Days and Observances

Federal law and university policy prohibit discrimination on the basis of religious belief. It is the policy of the University of Louisville to accommodate students, faculty, and staff who observe religious work-restricted holy days.

Students: Students who observe work-restricted religious holy days must be allowed to do so without jeopardizing their academic standing in any course. Faculty are obliged to accommodate students' request(s) for adjustments in course work on the grounds of religious observance, provided that the student(s) make such request(s) in writing during the first two (2) weeks of term.

Deans and department chairs must investigate and resolve student complaints arising from alleged faculty failure to make reasonable accommodations under these guidelines.

Statement on Diversity

The University of Louisville strives to foster and sustain an environment of inclusiveness that empowers us all to achieve our highest potential without fear of prejudice or bias.

We commit ourselves to building an exemplary educational community that offers a nurturing and challenging intellectual climate, a respect for the spectrum of human diversity, and a genuine understanding of the many differences-including race, ethnicity, gender, gender identity/expression, sexual orientation, age, socioeconomic status, disability, religion, national origin or military status-that enrich a vibrant metropolitan research university.

We expect every member of our academic family to embrace the underlying values of this vision and to demonstrate a strong commitment to attracting, retaining and supporting students, faculty and staff who reflect the diversity of our larger society.

SUPPORT SERVICES

Students with Disabilities

The University of Louisville is committed to providing access to programs and services for qualified students with disabilities. If you are a student with a disability and require accommodation to participate and complete requirements for this class, notify me immediately and contact the Disability Resource Center (Stevenson Hall, 502-852-6938, <http://louisville.edu/disability>) for verification of eligibility and determination of specific accommodations.

Basic Needs Support

Doing well in classes (and in life, for that matter) means getting a good night's sleep, having enough to eat, and being able to get to where you need to go. If you are having any difficulties with these basic necessities, remember that UofL has resources to assist you. These challenges are unfortunately more common than we would wish. Please reach out to me or to one of these great resources if you find yourself in need at any time during this course or after.

- Food (fresh and non-perishable), household and toiletry items: [Cardinal Cupboard](#) (SAC W312)
- Clothing, shoes, household items and office/art supplies: [UofL Free Store](#) (SAC 303C)
- If you're experiencing any academic, financial, or personal difficulties, a [Student Success Coordinator](#) in UofL's Student Success Center can work with you individually to provide guidance and support as well as connect you to relevant resources.
- The UofL Concern Center can help you find and connect with relevant resources: <https://louisville.concerncenter.com/>
- You can also reach out to the Dean of Students Office at 502.852.5787 or <http://louisville.edu/dos>

Counseling

If you notice you are having a difficult time or generally feel stuck, it may be helpful to work with a trained therapist at the Counseling Center in an individual or group setting. People come into the Counseling Center to discuss a range of topics, including relationships, family, identities, grief and loss, depression, stress, and many more experiences and concerns. The Counseling Center provides short term individual, group, and couples counseling, crisis intervention, and psychological testing. Clients seek services for a variety of areas of concern, including psychological, personal/social, academic, and career issues.

To schedule an appointment, please contact the Counseling Center at 502-852-6585 or stop by the office in the Student Activities Center Room W-204. For more information, visit <http://louisville.edu/counseling/>.

Library Services

Library services are available for students in distance education-online courses, including off-campus access to online databases and Electronic Course Reserves. The UofL librarians are available to assist you with library services. For more information view the [Library Services for Distance Education and Online Courses](#) page.

Technical Support

If you need technical support with your university account, unlocking your password, accessing wireless, Blackboard or other technical issues, contact the HelpDesk at (502) 852-7997. You can chat with a support expert or submit an email by visiting the [HelpDesk Resources](#) website. Many useful videos can be found at the [Blackboard 9.1 Help](#) page.

Writing Center

The University Writing Center is committed to supporting the writing of distance education students. If you are taking a distance education course and cannot make a face-to-face appointment at the Writing Center, you can schedule an online consultation through their Virtual Writing Center. They provide both online live chat sessions and, when that's not possible, they can respond to your draft in writing through an eTutoring session. Learn more at the [Writing Center](#) website.

DISCLAIMER FOR POSSIBLE SYLLABUS REVISIONS

This syllabus is subject to change. Any changes will be posted on the Announcements page of Blackboard and/or emailed to students' official UofL email account.

DATE OF LAST REVISION OF THIS SYLLABUS

This syllabus was last updated on Sunday, August 18, 2024 at 2:30 PM.