MATH F251X Calculus I
Summer 2020 Course Syllabus

Instructor Information:

Name: Latrice Bowman **Email:** lnbowman@alaska.edu

Office: Chapman 210B (also can be contacted through Zoom)

Contact: Blackboard or email is preferred (907-474-5427)

Appointments: To make an appointment to meet with your instructor
https://lnbowman.youcanbook.me *(This link is also in Blackboard)*

Course Information

This is a 4 credit summer course, meaning that this normally 15 week course has been condensed to 12 weeks. The normal recitations for this course will be built into the daily meetings. You should expect to work on this course a minimum of 3 hours per day Monday - Thursday (or 12 hours a week) outside of class time. Some students may need to spend more time than this to go through all of the materials and fully understand the concepts; you should not be spending less than this. Blackboard will be the LMS used to house all of the assignments, due dates, notifications and grades.

Why is Calculus so important?

Calculus is one of mathematics' premiere computational tools. It is the language of physics and engineering, and much of chemistry, economics, biology, and (yes) a broad portion of mathematics, providing a mathematically precise framework for studying how quantifiable information changes with time, and how to understand those changes. For example, position and energy in mechanics, the velocity of a fluid, magnetic field strength, and probabilities in Brownian motion all involve continuous quantities described using calculus. In addition, calculus is used to approximately describe things that are actually discrete, like populations or votes or the numbers of molecules in a chemical process.

The two principle tools of calculus are differentiation and integration.

Differentiation concerns how changes in one variable affect another. It is used to answer such questions as: How does a population of bacteria change as time changes? Or How does the temperature of the ocean change as depth increases?

Integration, on the other hand, is a kind of reverse process to differentiation. We use it to answer questions such as: If we know how much a population is changing during a year, can we reconstruct the total population change for the year? Can we determine the absolute size of the population at the end of the year?

In this course we need to *develop the mathematical theory* of derivatives and integrals and we need to learn *how and when* to apply these tools in applications.

Course Description

A first course in single-variable calculus. Topics include limits; continuity and differentiation of functions; applications of the derivative to graphing, optimization, and rates of change; definite and indefinite integration; and the Fundamental Theorem of Calculus. Note: Credit may not be earned for both MATH F251X and MATH F230X. **Prerequisites:** MATH F151X and MATH F152X; or MATH F156X; or placement.

Course Materials

Calculus: Early Transcendentals 8th Edition by James Stewart ISBN-13: 978-1285741550 and ISBN-10: 1285741552 (**The actual text is optional but you will need the WebAssign Access which does provide access to the e-book; there are copies of the text in the tutoring centers for students to use.**)

WebAssign Access- You will be doing a significant portion of your homework online. To do this you must have a WebAssign access code. If you purchase your textbook from the UAF bookstore this code will come packaged with your text. If not, you can purchase access through WebAssign. If you have not yet purchased a code, don't fret! The first 15 days of the course you will have temporary access to WebAssign so that you can work on your assignments and not fall behind. To access WebAssign, you can use any of the links in blackboard.

Gradescope Access- This access will be set up once you are registered in the course. You can access Gradescope through any of the links in blackboard or by going to gradescope.com and logging in with your school credentials.

Technological Requirements

For some of this course you are expected to have access to the internet and some more than basic computer literacy. Students will be expected to print assignments. They will be expected to scan or take pictures of assignments and turn them into a multi-page PDF file. If you do not already have a digital file storage or app to convert files I would recommend having a Dropbox account (also if students have the app, you can use your phone to create PDFs of your assignments. You can use the following link to connect for free https://db.tt/Lu39TA52). Students will be expected to upload work and complete some math assignments on the computer.

Calculator Policy

This course tests students basic mathematical skills along with the progressive skills required for Calculus. Students should get into the habit of simplifying answers and writing out exact solutions. This means that while working in WebAssign though there are some problems that may require the use of a calculator, students should get into the habit of writing out exact solutions and using the calculator only when asked to round an answer or to get approximate answers for complicated expressions. On the written assignments students will be expected to give exact answers. On proficiencies and eaxams, students will NOT be able to use a calculator. Please note that this means on many problems students should be able to add, subtract, multiply, divide, root and exponentiate values by hand.

Student Learning Outcomes

- Ability to evaluate and simplify limits, derivatives, and integrals
- Ability to interpret the limits of functions and graphs
- Students will be able to obtain derivatives using both the definition and the properties of derivatives and integrals
- Students will be able to use derivatives to graph functions
- Students will use derivatives to solve applied problems
- Students will be able to evaluate definite and indefinite integrals
- Students will be able to approximate and find exact values of areas

This course is listed as a General Education Math Course as such you will be expected to meet the general learning outcomes 1 and 2.

1. Build knowledge of human institutions, sociocultural processes, and the physical and natural works through the study of mathematics. Competence will be demonstrated for the foundational information in each subject area, its context and significance, and the methods used in advancing each.
2. Develop intellectual and practical skills across the curriculum, including inquiry and analysis, critical and creative thinking, problem solving, written and oral communication, information literacy, technological competence, and collaborative learning. Proficiency will be demonstrated across the curriculum through critical analysis of proffered information, well-reasoned solutions to problems or inferences drawn from evidence, effective written and oral communication, and satisfactory outcomes of group projects.

Course Evaluation Methods

Students are expected to actively participate in this course by attending class, doing assignments, asking questions and attending office hours (as needed). Students are expected to log into WebAssign a minimum of 4 days a week, complete the WebAssign lessons each of these days, complete written assignments weekly, ask questions and communicate with classmates and the instructor. Grades will be updated each Friday in Blackboard; students will be emailed about low grades. Any student who has two consecutive weekly averages below 50% will be dropped from the course. Your grade in this course will be based on the following components.

Participation

Your participation grade is based on attendance and the completion the three course introduction assignments, logging into WebAssign at least 4 days a week, and communicating with the instructor. Every two weeks you will receive information about your course progress. If necessary you may be asked to schedule a meeting with your instructor to talk about your progress. This component makes up 5% of your overall grade.

> The three course introduction assignments are 1) Completing the Gradescope introduction assignment, 2) Completing the WebAssign introduction assignment, 3) Making and attending a 15 minute appointment with the instructor, and 4) Making and attending a 15 minute online tutoring appointment. Both the instructor and tutor appointments need to be scheduled and completed between Wednesday May 20 and Friday May 28. Any appointments completed outside of these dates will not receive credit towards these assignments. Do not wait until the last minute to schedule these; there are more than enough appointment slots for all students between the given dates and additional time slots will not be added.

WebAssign Homework

WebAssign homework will be due multiple times each week. It is the student's responsibility to keep up with these due dates. These homework assignments provide students with the opportunity to practice routine problems and receive immediate feedback on correctness.

WebAssign quizzes submitted 48 hours before the due date will receive 5% extra credit

Best Practices for using WebAssign:

- attempt every single problem the same day the topic was reviewed
- have notes and notebook paper ready
- write the assignment section at the top of your notebook page

- write down your work for each problem along with the number of the problem and circle your final answer
- keep your work (Why? So a tutor/teacher/classmate can help figure what went wrong if needed. Also, you can remember either what you did right or where you got stuck.)

WebAssign Logistics

- You (usually) get 4 chances to get a problem correct.
- Each section will be due at 11:59pm the day after the material should be covered.
- Bonus points can be earned for exemplary WebAssign completion. If an assignment is 100% complete 48 hours before the due date then an extra 5% is earned.
- Each WebAssign assignment is equally weighted. No scores are dropped.
- **THERE ARE NO EXTENSIONS ON WEBASSIGN AS THESE ARE ALL POSTED AS OF THE FIRST DAY OF CLASS**

WebAssign Access

You will access WebAssign by using link in the Blackboard or going to https://www.webassign.com.

If you do not yet have your access code, you still need to log in and use the temporary access to complete the first few assignments. (**Extensions will not be given on missed WebAssign Assignments**)

If you already have an account from a previous semester you may have to contact WebAssign's student tech support to link your accounts if you did not have it linked through Blackboard previously. If you are having trouble with WebAssign, please let your instructor know and contact WebAssign's student tech support at https://webassign.com/support/student-support.

WebAssign gives free access for two weeks after the start of class. To continue using WebAssign after that either enter an access code or purchase access online. There are no good excuses for missing WebAssign assignments at the start of the semester. WebAssign Assignments make up 10% of your total grade.

Written Assignments

There will be a written assignment due each week. One of the student learning outcomes for this course is for students to show they understand mathematical notation, can write out clear mathematical solutions, and communicate mathematics concisely. This is equivalent to being able to write essays of a certain length with correct grammar and punctuation.

Written assignments should be started after completing the WebAssign assignments for the sections and should be started well before the due date (all of the assignments are posted as of the first day of class). If you are not understanding the material then you need to ask questions and seek help. Math is inherently comprehensive. If you don't understand a concept, do not try skip over it as you will only make later lessons more difficult to complete. Written assignments make up 20% of your overall grade.

Written Assignment Guidelines

As mentioned, writing mathematics correctly is one of the goals that is expected of students leaving a Calculus course. Work that does not meet the standards listed below will be reduced in the grade or in extreme cases, not accepted. Work should be neatly written on the provided PDFs and scanned into Gradescope as a single PDF file (see the information about submitting homework in Gradescope). Files not correctly submitted prior to the assignment deadline are late and will not be graded. **Do not send assignments to my email or office as they will not be graded.** Assignments are to be submitted by **11:59pm** on the day they are due. You will not be able to upload files after this time. Assignment grades will be based on the following (points will be docked for failing to meet these conditions):

1. Assignment is submitted as a single PDF file labeled with your name and lesson number.
2. Work is submitted on the provided template or laid out in the same manner as the template (with no additional pages).
3. Work is submitted on time (at 11:59pm on the due date)- see late work policy below.
4. Work is neat, is presented in a way that can be easily read (no lines through work or scratched out places, no notes or comments in margins). This should be a polished final copy showing your best work.
5. Work adheres to the Notation Guidelines.

Questions to homework problems should be asked prior to submitting the assignment; your instructor answers email messages daily (except on weekends) and there are many tutoring resources available to you. There is no good excuse for questions to go unanswered. It is your responsibility to complete and turn in your work on time. Not having a tutor, or not understanding the requirements or concepts are not acceptable excuses for missing work.

Notation Guidelines

Homework Assignment grades will be based on the following deductions will be given for each instance of an unmet condition:

- Work is neat, is presented in a way that can be easily read (no lines through work or scratched out places, no notes or comments in margins).
- Solutions are written as mathematical sentences/paragraphs (i.e. there is a beginning, middle, and end)
- Problems have the correct set up, or the correct approach is being used
- Work is shown to support student reasoning
- Solution is clearly stated and is correct
- Problems, their work, and their solutions should be together
- Functions should be labeled
- Points/intercepts should be written as ordered pairs
- Lines are written as equations
- If there are equal signs being used, then the expressions are in fact equivalent.
- Solutions are written in a vertical format
- Graphs should be completely labeled.
- Answers are completely simplified algebraically (unless otherwise stated)
- Solutions are given as exact answers (not decimal approximations) unless otherwise indicated
- Answers have correct units where necessary

Don't leave work blank or unanswered. There is nothing worse than not trying. The only time students will get a zero on a problem is if they do not attempt the problem.

Written Homework is due by 11:59pm on its due date. You are expected to submit a final, polished copy of your work and you will be graded based on the above expectations. You may work ahead on assignments (and are encouraged to do so) however you should have no more than two ungraded, submitted assignments at a time. Please be aware that though you are able to work at your own pace this is not an individual study course. All assignments have set due dates and times. Assignment grades are final so do not turn in an assignment unless you are ready for it to be graded; you will have one attempt at the written assignments so check your work AND YOUR SUBMISSION before you turn it in.

Written Homework is open book, open notes, you may work in groups, and you are encouraged to go tutoring or office hours to get help. You must show all relevant work, and at the discretion of the instructor, points will be deducted if steps are skipped. Solutions should be organized and legible. Points will be deducted for sloppiness.

Late homework (based on the assignment submission time in Gradescope) is not accepted (1. You will not be able to submit an assignment after it is past due, and 2. That assignment will receive a grade of zero.). No homework grades are dropped. All Written Homework Assignments will be equally weighted.

Solutions to written homework will automatically appear on Blackboard the day after the due date.

In Class Assignments

During this course you will be asked to complete some assignments during class. Sometimes these will be individual assignments sometimes you will be asked to work with your peers. Many of these assignments will be due at the end of class. Students should bring their course notes, prior homework and other materials to work on these assignments. These in class assignments cannot be made up if missed and will count at 10% of your overall grade.

Proficiencies, and the Final Exam

There will be four proficiencies (Limits, Derivatives, Applications, and Integrals) and a cumulative final exam. Sample proficiencies and finals are available on the course Webpage.

Proficiency	**Date to be Taken**
Limit 1st Attempt	Tuesday June 9
Derivative 1st Attempt	Wednesday July 1
Applications 1st Attempt	Tuesday July 21
Integral 1st Attempt	Thursday July 30
Limit and Derivative Retake	Tuesday August 4
Application and Integral Retake	Wednesday August 5
Final Exam	Thursday August 6

Proficiency Policy:

You will be allowed up to 1 hour to complete each proficiency. In order to pass a proficiency, a student must receive a score of at least 85%. All problems will be graded on the students proficiency in apply the calculus methods as well as communicating the solution. Students who meet the proficiency on the first attempt will not need to do a retake. Students who do not meet the proficiency will need to do a retake during the last week of class. The grading rubric for the proficiencies is given below.

Proficiency Grading Ruberic		
Attempt	Score	Outcome
1st Attempt	85-100%	Earn 100%, Done
	0-84%	Earn 0%, Retake proficiency
2nd Attempt	85-100%	Earn 90%, Done
	65-84%	Earn 70%, Done
	50-64%	Earn 50%, Done
	0-49%	Earn 25%, Done
	0-84 on 1st, did not do retake	Earn 2nd Attempt score less 10%

Final Policy:

The comprehensive final exam for this course will take place on Thursday August 6. Students should make note that final exams cannot be taken early. If a student needs to take the final at a later date, they will need to have at least a C or better in the course and must provide documentation of

extenuating circumstances beyond their control preventing them from taking the final at the indicated time. In such cases, the student will receive an incomplete and arrangements will be made for when to take the final exam.

Summary Rubric

Graded Criteria	Percentage of Grade
Participation	5%
WebAssign Quizzes	10%
Written Homework	20%
In-class Assignments	10%
Limit Proficiency	10%
Derivative Proficiency	10%
Application Proficiency	10%
Integral Proficiency	10%
Final Exam	15%

The grading scale used will be the plus/minus letter grades

Math 251 Grade Distribution		
97-100% = A+	94-96% = A	90-93% = A-
87-89% = B+	84-86% = B	80-83% = B-
70-79% = C	60-69% = D	0-59% = F

Academic Integrity

As described by UAF, scholastic dishonesty constitutes a violation of the university rules and regulations and is punishable according to the procedures outlined by UAF. Scholastic dishonesty includes, but is not limited to, cheating on any assignment, plagiarism, and collusion. Cheating includes providing answers to or taking answers from another student or source. Plagiarism includes the use of another author's words or arguments without attribution. Collusion includes unauthorized collaboration with another person in preparing written work for the fulfillment of any course requirement.

Scholastic dishonesty is punishable by a zero on the assignment for the first offense and a second offense removal from the course with a grade of "F." For more information go to http://uaf.edu/usa/student-resources/conduct/#condu

Faculty Initiated Withdrawal triggered by Inadequate Student Participation

The instructor will withdraw students who stop participating in the course, and notifications will go out through UA email. Here are some examples of inadequate student participation:

- Students not completing or not turning in **two** written homework assignments
- Students not completing or not turning in **four** WebAssign lessons
- Students missing a proficiency
- Students not attending four consecutive classes
- Students having two consecutive bi-weekly grade check with grades below 50%

After the withdrawal date, students who stop participating or who meet any of the above criteria will receive a failing grade in the course.

Additional Support

The instructor is here to help students succeed, however, if a student does not ask questions and does not seek assistance then they will not do well in this course. Students can contact the instructor through Blackboard, through email, or by scheduling an appointment

DMS One-on-one and Online Tutoring:

Free tutoring by appointment. This service is available to any UAF student registered in a core MATH course. Appointments can be made for 15 minutes up to an hour and can be scheduled up to two weeks in advance. In-person tutoring is available in Chapman 210 and Online tutoring is available through Zoom. Students can sign up for an appointment at https://fairbanks.go-redrock.com

UAF Helpdesk:

Go to http://www.alaska.edu/oit/ to see about current network outages and technology news.

For technical questions, contact the Help Desk at:

- e-mail at helpdesk@alaska.edu
- phone: 450.8300 (in the Fairbanks area) or 1.800.478.8226 (outside of Fairbanks)

SSS (Student Support Services)

SSS provides one-on-one tutoring to students who satisfy the requirements of the program. In addition to math tutoring, SSS provides advising, all core subject tutoring, laptop rentals, and some other services.

Office of Disability Services:

This office implements the Americans with Disabilities Act (ADA) and insures that UAF students have equal access to the campus and course materials. The instructor of this class will work with the Office of Disabilities Services (208 WHIT, 474-5655) to provide reasonable accommodation to students with disabilities. Please provide current accommodation paperwork to the instructor by May 30 or within one week of receipt.

For more information and resources, please see the academic advising resource list (https://www.uaf.edu/advising/lr/SKM_364e19011717281.pdf)

UAF embraces and grows a culture of respect, diversity, inclusion, and caring. Students at this university are protected against sexual harassment and discrimination (Title IX). Faculty members are designated as responsible employees which means they are required to report sexual misconduct. Graduate teaching assistants do not share the same reporting obligations. For more information on your rights as a student and the resources available to you to resolve problems, please go the following site: https://catalog.uaf.edu/academics-regulations/students-rights-responsibilities/.