Essential Information

Website	uaf-math251.github.io
Prerequisite	MATH F151X and MATH F152X; or MATH F156X; or placement.
Required Text	*Calculus: Early Transcendentals 8th Edition*, James Stewart, ISBN-13: 978-1285741550
Required Material	WebAssign Access Code (discussed below)
Optional Material	*Student Solutions Manual for Stewart's Single Variable Calculus: Early Transcendentals, 8th Edition* ISBN-13: 978-1305272422 (Solutions to odd-numbered exercises; available on Amazon)

Class Time

There are **five** hours of class meetings every week, one hour daily. Tuesday is a recitation hour with a Teaching Assistant while the remaining days are a lecture with your instructor. Times and locations are available on the course website. Classes will include traditional lectures as well as group work.

Tentative Schedule

The course website contains a schedule for the semester listing the topics to be covered each class, the dates each assignment is due, the topics of every quiz, and so forth. You should consult this schedule routinely. Any minor adjustments to the schedule will be announced in advance.

Office Hours and Communication

Instructors will schedule formal office hours, which will be listed the main course webpage.

Class announcements will be made using Blackboard. Instructors will contact students via their UAF email address so it will be important to check this account regularly.

Online Course Materials

Most course materials (e.g., this syllabus, quiz/exam solutions, study materials, etc.) will be posted on the course webpage. Certain course materials, namely **grades** and **solutions to the written homework**, are available on BlackBoard, which you can access via the main course website.

Description, Course Goals & Student Learning Outcomes

Calculus collects many of the best tools in mathematics. It has applications in all the sciences, in engineering, and it is part of the UAF core curriculum.

The two main tools in calculus are **differentiation** and **integration**, both of which are **limits**. Differentiation concerns how changes in one variable affect another. (How does a population of bacteria change as time changes? How does the temperature of the ocean change as depth increases?) Integration is the process of adding many small parts. Surprisingly, it reverses differentiation.

Students completing the course will have the mathematical foundation to be successful in Calculus II and other courses requiring this background. Specifically, students will be able to

- understand the role of limits in the definitions of continuity and derivatives,
- compute elementary derivatives from the definition,
- develop the skills to compute standard derivatives,

- be able to apply derivatives to common types of applied problems,
- understand the definition of the the definite integral,
- be able to apply the Fundamental Theorem of Calculus to compute definite integrals,
- be able to apply integration to common types of applied problems.

Evaluation and Grades

Grades are determined as follows. (Each component of the grade is discussed below.)

Webassign Homework	7.5%
Written Homework	7.5%
Quizzes	15%
Midterm 1	15%
Derivative Proficiency	7.5%
Midterm 2	15%
Integral Proficiency	7.5%
Final Exam	25%
total	100%

Letter grades will be assigned according to the following scale. This scale is a guarantee; the instructors reserve the right to lower the thresholds.

A+	97–100%	C+	77–79%	F $< 60\%$
A	93–96%	C	70–76%	
A-	90–92%	C-	not given	
B+	87–89%	D+	67–69%	
B	83–86%	D	63–66%	
B-	80-82%	D-	60–62%	

Homework

Homework in this class comes in two varieties: online homework via WebAssign, and written homework on paper.

Written Homework

Written homework is due approximately weekly according to the schedule found on the main course website, typically every Monday. Late homework is not accepted. No homework grades are dropped. All written homework assignments are equally weighted. Solutions will appear on Blackboard.

The written homework problems typically consist of more challenging or interesting exercises, and allow you to practice presenting a solution suitable for reading by another human being. You are encouraged to work with others to solve these problems, and you have access to the Math Lab to get help. However, when you write up your final solutions, you need to do so on your own.

The written homework is **due at the start of your lecture** on the day it is due.

Presentation matters. You must show all relevant work, your writing should be legibile, and it should be easy for the grader to follow your reasoning. At the discretion of the grader, points will be deducted for poor presentation. To aid in presentation, you should expect to first prepare a draft of your solutions, and then a final edition to be graded.

WebAssign

WebAssign homework will be assigned multiple times each week. These problems consist of more routine exercises and and allow you to receive immediate feedback on correctness. You are welcome to use your text and a calculator to help solve these problems, but the use of more sophisticated tools (e.g., Wolfram Alpha) will undermine the benefit to you of the homework, and may leave you unprepared for the quizzes and exams.

Logistics:

- You will need a WebAssign code. Texts purchased from the UAF bookstore include one; otherwise, a code can be purchased from WebAssign directly. WebAssign can be used for two weeks in a "trial" period, which you can take advantage of if you are uncertain about you placement in this class.
- Instructions for logging in to WebAssign can be found on the course website.
- You (usually) get 5 chances to get a problem correct.
- Each assignment is due at 11 pm.
- You may request an automatic 3-day extension though you will only be allowed to earn back half the remaining points.
- Each WebAssign assignment is equally weighted. No scores are dropped.

Recitation and Quizzes

The recitation hour is focused on reviewing material from the previous week, asking questions related to this material, preparing for quizzes and exams, and taking the weekly quiz.

The quiz will cover the material taught in the classes held since the previous quiz; specific topics can be found in the schedule on the course website. Quizzes are equally weighted, and are given under testing conditions; books, notes, and calculators are not allowed. Performance on the quizzes is a better indicator of exam performance, and how well you are learning the course material, than homework which may be done with the input of tutors/friends/internet/etc.

Quizzes cannot be made up except with a documented excused absence. No quiz grade will be dropped. Solutions to quizzes will be posted on the course webpage.

Midterms

There are two midterm exams this semester, to be held on the dates in the schedule on the course website. The midterms are the same for all sections; they are prepared and approved by all instructors teaching the course.

Make-up midterms will be given only for documented excused absences.

Proficiencies

A proficiency is an exam covering a routine skill. In this course we have two of these, one for derivatives and one for integrals, on the dates listed in the online schedule. Proficiencies will be graded on a binary scale for each problem (no partial credit). Students must earn a minimum score to earn credit, otherwise a 0 score will be awarded. Multiple attempts (three for the derivative proficiency but only two for the integral proficiency) will be allowed to earn this credit. Details will be announced prior to each proficiency.

Final Exam

The cumulative final exam will be held at the day/time listed in the online schedule. A make-up final exam will be given only in extenuating circumstances, for documented and excused reasons at the discretion of the instructors.

Tutoring and Resources

- The Math and Stat Lab, Chapman Building Room 305, offers walk-in tutoring, with no appointment needed. See `www.uaf.edu/dms/mathlab` for schedules and availability.

- Free one-on-one (or small group) tutoring is available in Chapman 210. You must schedule an appointment at www.uaf.edu/dms/mathlab.
- Student Support Services offers free tutoring in many subjects to students who qualify for their program.
- ASUAF offers private tutoring for a small fee (based on student income).

Rules and Policies

Participation and Attendance

Class and recitation attendance is mandatory. Students who stop participating in the course will be withdrawn. Examples of inadequate participation include, but are not limited to:

- missing class five times
- not completing or not turning in **three** written homework assignments
- failing to participate in classroom activities
- repeatedly failing tests and quizzes with no attempt at remediation

Disability Services

The Office of Disability Services implements the Americans with Disabilities Act (ADA), and ensures that UAF students have equal access to the campus and course materials. The instructors will work with the Office of Disability Services (208 Whitaker, 474-5655) to provide reasonable accommodations to students with disabilities.

Student Protections and Services

Every qualified student is welcome in our classes. As needed, we are happy to work with you, Disability Services, Military and Veteran Services, Rural Student Services, etc. to find reasonable accommodations. Students at this university are protected against sexual harassment and discrimination (Title IX), and minors have additional protections. *As required,* if we notice or are informed of *certain types* of misconduct, then we are required to report it to the appropriate authorities. For more information on your rights as a student and the resources available to you, please go to the following site: www.uaf.edu/handbook.

Incomplete Grade

Incomplete (I) will only be given in DMS courses in cases where the student has completed the majority (normally all but the last three weeks) of a course with a grade of C or better, but for personal reasons beyond his/her control has been unable to complete the course during the regular term. Negligence or indifference are not acceptable reasons for the granting of an incomplete grade.

Late Withdrawals

A withdrawal after the deadline (currently 9 weeks into the semester) from a DMS course will normally be granted only in cases where the student is performing satisfactorily (i.e., C or better) in a course, but has exceptional reasons, beyond his/her control, for being unable to complete the course. These exceptional reasons should be detailed in writing to the instructor, department head and dean.

No Early Final Examinations

Final examinations for DMS courses shall not be held earlier than the date and time published in the official term schedule. Normally, a student will not be allowed to take a final exam early.

Exceptions can be made by individual instructors, but should only be allowed in exceptional circumstances and in a manner which doesn't endanger the security of the exam.

Academic Dishonesty

Academic dishonesty, including cheating and plagiarism, will not be tolerated. It is a violation of the Student Code of Conduct and will be punished according to UAF procedures.

Habits that Increase Success

The items listed below are things a student can do to increase the amount of material learned and his/her chances of ending the semester with a passing grade. The items are based on a combination of internal and nation-wide studies.

1. Attend and participate in **every** class.
2. Work every problem on every homework assignment (written or online) **independently**. Check your answer and get help if needed before it is due.
3. Take the review week seriously. Start practicing these habits on Day 1 of the semester.
4. Treat all graded work as **formative** assessments. (This is fancy education-speak for learning from your mistakes.) This requires that you **rework** (not "look over") all missed problems and then try another similar problem.
5. If a student attends every class and has solid prerequisite knowledge, this course should require roughly 10 hours of work outside of class. If a student skips class and/or has weak prerequisite knowledge, this course should require more. **Schedule** these Calculus Study Hours the same way you schedule class meetings or work hours.