COURSE FORMAT	In-Person, Dawson 108 MoWeFr 2:00–3:20pm *Mondays and Wednesdays are discussion days.* *Fridays are reserved for quizzes and "hands-on" activities.*
COURSE DESCRIPTION	Fundamental concepts of analytic geometry and calculus; functions, graphs, limits, derivatives and integrals.
INSTRUCTOR INFORMATION	Sungju Moon, PhD **Primary Contact:** Use the Inbox tool within Canvas **Email:** sungju.moon@nevadastate.edu **Office Phone:** (702) 992-2725 **Office Location:** Dawson 223 Please note that all official University communication is conducted using Nevada State University-issued email addresses (e.g., @students.nevadastate.edu) in order to comply with the Family Educational Rights and Privacy Act (FERPA). If you need assistance finding or accessing your NSU email account, please see the Policies & Student Responsibilities page.
OFFICE HOURS	MoTuWeTh 1:00–2:00pm or whenever my office door is open Online meetings by appointment
E-MAIL & CLASSROOM RESPONSE TIME	You can generally expect a response to e-mails within 24–48 hours (or slightly longer over weekends or holidays). Feedback for completed discussions, quizzes, and assignments depends on the length and complexity of the activity and could take up to 10 days. For questions on the status of a completed assignment, discussion, or test please contact me.
REQUIRED TEXT(S)	Boelkins, M., Austin, D., Schlicker, S., *Active Calculus*, 2018 Updated Ed. (or later) This is a free online textbook available at URL: https://activecalculus.org/
OPTIONAL SUPPLEMENTAL MATERIALS	*Calculator*—A scientific calculator or access to equivalent web-based platforms such as Desmos or Octave Online is recommended for some of the challenge problems. *Index cards*—Students can use index cards for the Categorized Summary Notes assignment. *Printer access*—Solution Forms for homework assignments can be digitally annotated, but only physical copies (printed out) will be accepted.
LEARNING OUTCOMES	After finishing this course, you will be able to: • Evaluate limits using graphical, numeric, and algebraic methods, • Compute derivatives using graphical, numeric, and algebraic methods, • Solve optimization problems using calculus-based ideas and techniques, • Use the Fundamental Theorem of Calculus to evaluate definite integrals, and • Correctly express mathematical ideas in a sentence using accurate notation and well-defined symbols

Class Schedule

See Page 8 of the course syllabus for the tentative course calendar.
All dates are subject to change.

Assignment Description & Due Dates

Homework Assignments (20%): Homework assignments will be assigned on a weekly basis and will consist of *exercise* and *challenge* problems. Exercise problems generally involve routine calculations and straightforward applications of the ideas discussed in class. Challenge problems will require some additional thinking.

For each written homework assignment, you are asked to fill out the *Solution Form*. These forms are structured to help you learn how to write your solutions fully. The structural guides for writing your solutions will be gradually phased out over the course of the semester. You are encouraged to write out your solutions in full on a separate sheet of paper before filling out the Solution Form, so that what you submit are at least the second drafts of your solutions.

Answers (but not the complete solutions) to the exercise problems will be provided when the assignment is posted. There will be incentives for finding errors in the provided answers. You must check your answers against the posted answers; the Solution Form will specifically ask whether they match. Exercise problems will be graded based on completion. Answers to the challenge problems will not be provided in advance, but we will tackle these problems together in groups during the Friday "hands-on" sessions (click here to view the Friday Activity Guide for more information). Challenge problems will be graded based on completion, accuracy, and exposition. Complete solutions to the homework problems will be provided after individual grades are posted.

Working together on homework problems is strongly encouraged with the following limitations: (1) each student must submit their own Solution Form and disclose the people who you worked with on a problem-by-problem basis. (2) Students are not allowed to divide up the work and pool together the solutions (the "divide and conquer" approach). (3) Students cannot work with people who are not currently taking this course including tutors, family members, artificial intelligence, or strangers online; however, getting help on problems that are similar to homework problems is allowed.

Categorized Summary Notes (5%): Students are asked to accumulate and maintain categorized entries of summary notes throughout the semester. Approved summary notes may be used for the open-notes portion of each midterm exam. The suggested categories are the following:

- Definitions
- Theorems
- Notation
- Examples
- Ideas & Insights

A "snapshot" of your growing list of note entries is to be uploaded online each week. You may collect stacks of index cards or, alternatively, you can try typing up your note entries for clarity and editability using the provided format. For those who are not familiar with LaTeX, basic introduction to a 'gateway' platform called LyX will be provided.

Mini-Projects (2 projects, 10% each): Mini-projects are group activities. Each group will draft an expository paper on a given topic. Details will be announced in class.

Participation (20%): Throughout the semester, you will be asked to self-evaluate your overall participation levels on a regular basis.

In-Class Activities (10%): You must submit a good-faith effort to complete the in-class activities in class including in-class discussion and problem solving (handouts), Exit Tickets and the Friday "hands-on" sessions. The self-evaluation form will ask you to rate yourself on your in-class participation levels and provide supporting evidence/narrative for any anomalies.

- In-class discussion and problem solving: For the in-class sessions, you will be provided with companion handouts. These are designed to help you actively work on the material during our discussion. Do not be afraid to mess up the handouts as they are not for submission. In fact, you are encouraged to scribble down as much as possible!
- Exit Tickets: You will be asked to fill out an Exit Ticket to summarize what we have discussed at the end of each class session. You can also use this space to ask questions or provide feedback. The Exit Tickets can be anonymous but you may write down your name if you want a personalized response from the instructor.
- Friday "hands-on" sessions: This will look a little different from other in-class sessions. See Page 7 for more information.

Out-of-Class Activities (10%): At the beginning of the semester, you will be asked to come up with specific plans (including time and place) for agenda items such as:

- reviewing the material and making summary notecards
- working on homework problems
- finalizing homework assignments by completing Solution Forms
- revisiting old assignments for resubmission
- time set aside for catching up

The self-evaluation form will ask you to reflect on your success in following through your plans and adjust them as necessary.

Quizzes (5%): There will be weekly quizzes held at the beginning of class on Fridays. Typically, there will be two parts to a quiz. The first part will ask you to state a definition or theorem and the second part will involve an example involving the definition or the theorem. The quiz problems will be discussed in groups immediately following each quiz as part of the Friday session activities.

Exam Description

Exams (30%): There will be three midterm exams. See the course calendar for the tentative exam dates. You may use a scientific calculator although it will not be required. You are allowed to use the Categorized Summary Notes you have collected for the designated "open-notes" portion of the exam (more details to be announced).

Trend-based grading: In addition to taking the arithmetic mean of your exam scores, we will also make use of the trend-based grading scheme; i.e., your final grade can be replaced with the next predicted score extrapolated from your prior performance but only if it leads to a higher grade. After the second exam, a dashboard will be shared individually to keep track of your current score trends.

Late Work Policy

When students miss work for medical and/or personal reasons, they should access the Student Absence Notification System.

Late homework assignments will be accepted until the next assignment due date and will cost you a ★; however, homework assignments that are submitted after the solutions are posted will receive at most 50% of the total points available.

To make-up for any missed Friday "hands-on" activities, you must meet with your group outside of class (online or in-person) and submit a summary report of the meeting. The summary report must include the names of at least two participating members, who will each earn an additional ★ (except for the initially missing member).

The following assignments may *not* be turned in late for credit without explicit permission from the instructor:

- Self-Evaluation Forms
- Categorized Summary Notes
- Quizzes
- Mini-Projects
- Exams

In addition, you cannot receive a passing grade for the course without completing all major assessments.

Attendance Expectations

There may be days you do not to attend classes or leave early due to past or ongoing crises or distressing circumstances. Disclosure of specific reasons or details is not expected, but it will be helpful if you could communicate with me about instances of missed sessions or work; this is because (1) frequent or prolonged inactivity with regard to course contents will negatively impact your learning, and (2) open communication will help us reformulate missed assignments to suit your situation. Missing five consecutive class sessions or assignments without prior or follow-up notice will prompt me to check in with you for a 'pulse check'. Please know that I am available to provide resources and connect you to support services.

Exam Debrief

There may be opportunities for exam corrections. Schedule an individual meeting with the instructor to pick up your graded exam and discuss how the class is going.

Resubmission & Live-Grading

Homework assignments can be resubmitted for live-grading for up to full credit provided the following conditions are met:

1. The assignment was submitted on time.
2. The initial grade on the assignment was 50% or higher.

Live-grading means that you will initiate the resubmission process by presenting your reworked solutions on a whiteboard so that the instructor can provide feedback on the spot. You will be informed whether your resubmitted solution is acceptable.

The resubmission process of a homework problem can be initiated during the week that the particular assignment is returned and will cost 1 personal ★ per problem. Once initiated, resubmissions on that particular problem can be attempted as many times as needed until the next exam date.

Grading Criteria

Your grade will be determined by the following rubric:
(Course Point Totals)—100%

- Homework Assignments (20%)
- Mini-Projects (20%; 10% each)
- Participation (20%)
- Summary Notes (5%)
- Quizzes (5%)
- Exams (30%; trend-based grading)

Grading Scale (Letter Grade and Point Range):

A	93% or higher	C	73%–76.99%
A-	90%–92.99%	C-	70%–72.99%
B+	87%–89.99%	D+	67%–69.99%
B	83%–86.99%	D	63%–66.99%
B-	80%–82.99%	D-	60%–62.99%
C+	77%–79.99%	F	less than 60%

Accessing Grades and Instructor Feedback

To access your grades and find all of the instructor's feedback, click on Grades in the course navigation menu. Scroll through the list until you find the new graded assignment (indicated by the blue dot to the left of the assignment name). Then click on the assignment name. You will see your grade. Below it you can click on Show Rubric to see the marked up rubric. Click on the paper title if you want to download the original document. (The instructor's marks or comments will not appear on the downloaded document.) Click on the box to the right of the paper title to see the Turnitin report. Click on View Feedback to see the paper marked up with the instructor's comments/corrections in DocViewer. The instructor's feedback is on the right. Accessing Grades will take you step-by-step through how to find all instructor feedback and see the marked-up paper and rubric.

Policies & Student Responsibilities

Students are responsible for reading, understanding, and abiding by the policies listed on the Student Responsibilities page. This page contains information about conduct, plagiarism, cheating, and Turnitin, among other important policies related to this course, LASB, and NSU.

Artificial Intelligence (AI) Policy

Use Only With Permission. Students are allowed to use advanced automated tools (artificial intelligence or machine learning tools such as ChatGPT or Bard) on assignments in this course if instructor permission is obtained in advance. Unless given permission to use those tools, each student is expected to complete each assignment without substantive assistance from others, including automated tools. Students are responsible for ensuring the accuracy of any information provided by an AI tool.

Source: Adapted from the University of Delaware:
https://ctal.udel.edu/advanced-automated-tools/

Student Success Resources

At some point this semester, you may require help or support from various services on campus to help you be successful in your classes. On the Student Support & Resources page, you will find information about services like tutoring, library resources, advising, and help with writing assignments.

Guide to the Friday "Hands-On" Sessions and the ★ System

Stage 1: Take the weekly quiz & debrief with your group

On most Fridays, there will be a short quiz at the beginning of class (5–7 minutes). Immediately following the quiz, you will gather in groups and discuss the quiz problems with your fellow group members (5–10 minutes). Once everyone is in agreement about the quiz solution, you can notify the instructor. Upon confirmation, your group will receive a ★ and move on to the next stage.

Stage 2: Your group works on the challenge problems (one at a time)

Claim a whiteboard for your group. You are now tasked with a set of *challenge problems*. Work on one problem at a time starting with the first problem on the assignment worksheet. Once your group has reached a consensus on a working solution to a problem, designate one person from your group as the "compiler". The compiler's job is to finalize the group's solution.

If everyone is in agreement after the compiler presents their solution to the group, designate another person from your group (this cannot be the same person as the compiler) as the "presenter". The presenter will summon the instructor and present the group's solution to the instructor. If the solution is acceptable, your group will receive a ★. If the solution is not acceptable, you will get to try again next time when the instructor comes around until time runs out for the problem. Once you earn a ★, move on to the next challenge problem and repeat the process above. Collect as many ★s as you can! The ★s earned by your group will be transferred to your *personal star wallet* by the end of the day.

How to get unstuck. There will be times when you get stuck on a problem. Here are some ways to resolve it:

1. Ask for hints and/or clarifications from the instructor.
2. Send out a *spy* to take a peek at how other groups are dealing with the problem.

Group roles. It may be helpful to designate roles when you start working on a problem. These roles can include the compiler, the presenter, and the spy. One person can also serve as the secretary who will keep track of the number of ★s earned by your group. Make sure that no one person is dominating a particular role (especially watch out for "compiler hogging").

Stage 3: The whole class gets together to discuss the challenge problems

Occasionally, your instructor will ask for everyone's attention to discuss one of the challenge problems. We will use *hand raising* to signal this break. If your group has not earned a ★ for the particular challenge problem by this point, you will be asked to move on to the next challenge problem and your group will no longer be eligible for a ★ from the problem.

Stage 4: Write up your own solutions (refer to the "Solution Form")

The challenge problems are part of your homework assignment for the week, which also includes exercise problems in addition to the challenge problems. It is highly recommended that you work out a solution on a separate piece of paper and then, only after you have a reasonable grasp of the problem, fill out the Solution Form. In other words, the Solution Form should be your draft version 2 or higher. Each group will be given one printout of the Solution Form for scratch work and guidance, but you will need to print out your own Solution Forms for your personal submission. Alternatively, you may use a digital device to mark up the PDF file and print it out for submission. Feel free to continue communicating with your peers as you work on your Solution Form; that said, the written work that you turn in must be your own.

Course Schedule[†]

All Dates are Subject to Change

Date	Agenda	Assignment	Due
Mon, Aug 26	Discussion: rate of change (1.1)		
Wed, Aug 28	Discussion: limits and infinity (1.2)		
Fri, Aug 30	Quiz 0, Challenge 1: functions and notation	HW1	CSN[‡] 0
Mon, Sep 2	Labor Day Holiday		
Wed, Sep 4	Discussion: continuity (1.7)		HW1
Fri, Sep 6	Quiz 1, Challenge 2: limits and continuity	HW2	CSN 1
Mon, Sep 9	Discussion: derivatives I (1.3, 1.4)		
Wed, Sep 11	Discussion: derivatives II (1.3, 1.4, 1.6)		HW2
Fri, Sep 13	Quiz 2, Challenge 3: interpreting derivatives	HW3	CSN 2
Mon, Sep 16	Discussion: basic derivative rules (2.1)		
Wed, Sep 18	Discussion: special functions (2.2), product rule (2.3)		HW3
Fri, Sep 20	Quiz 3, Challenge 4: visualizing derivative rules		CSN 3
Mon, Sep 23	(No in-person class*) Discussion: quotient rule (2.4)		
Wed, Sep 25	Discussion: estimating derivatives (1.5)		HW4
Fri, Sep 27	Quiz 4, Challenge 5: estimation		CSN 4
Mon, Sep 30	Exam 1 Review	Mini 1[†]	
Wed, Oct 2	Exam 1		
Fri, Oct 4	Challenge 6: estimation	HW6	
Mon, Oct 7	Discussion: chain rule (2.5)		
Wed, Oct 9	Discussion: inverse functions (2.6)		
Fri, Oct 11	Quiz 5, Challenge 7: chain rule, inverse functions	HW7	CSN 5; Mini 1 Indiv.
Mon, Oct 14	Discussion: implicit differentiation (2.7)		
Wed, Oct 16	Discussion: l'Hôpital's rule (2.8)		HW7
Fri, Oct 18	Quiz 6, Challenge 8: l'Hôpital's problem	HW8	CSN 6
Mon, Oct 21	Discussion: related rates (3.5)		Mini 1 Group
Wed, Oct 23	Discussion: extreme values I (3.1, 3.2)		HW8
Fri, Oct 25	Nevada Day Holiday		CSN 7
Mon, Oct 28	Discussion: extreme values II		Mini 1 Final
Wed, Oct 30	Discussion: global optimization (3.3)		
Fri, Nov 1	Quiz 7, Challenge 9: application problems		CSN 8
Mon, Nov 4	Exam 2 Review	Mini 2	
Wed, Nov 6	Exam 2		
Fri, Nov 8	Work on Mini 2		

Date	Agenda	Assignment	Due
Mon, Nov 11	Veteran's Day Holiday		
Wed, Nov 13	Discussion: ideas behind integration (4.1)		
Fri, Nov 15	Quiz 8, Challenge 10: Riemann sum	HW10	CSN 9; Mini 2 Indiv.
Mon, Nov 18	Discussion: antiderivatives and Riemann sum (4.2)		
Wed, Nov 20	Discussion: definite integral (4.3)		HW10
Fri, Nov 22	Quiz 9, Challenge 11: antiderivatives	HW11	CSN 10; Mini 2 Group
Mon, Nov 25	Discussion: FTC I (4.4)		
Wed, Nov 27	Discussion: FTC II (5.2)		HW11
Fri, Nov 29	Thanksgiving Holiday		CSN 11
Mon, Dec 2	Discussion: integration by substitution		Mini 2 Final
Wed, Dec 4	Discussion: definite integrals practice		
Fri, Dec 6	Quiz 10, Challenge 12: illustrating FTC		CSN 12
Mon, Dec 9	Exam 3 Review		
Wed, Dec 11	Exam 3		

†Major assessments are highlighted in red.

‡Categorized summary notes. Blue highlight means that you can use the notes accumulated up to this point for the next exam.

*Replaced with a recorded lecture.