

# CALCULUS I

## Example Syllabus

This syllabus is subject to revision. All changes will be posted in the learning management system, and will be communicated to students via email.

**Course Description:** Limits, continuity, the derivative and its applications, and the integral and its applications.

**Learning Outcomes:** At the completion of this course, students will be able to:

1. Understand the concept of a limit, and compute limits of functions.
2. Understand the concept of a derivative, and be able to compute the derivatives of various functions.
3. Apply limits and the derivative to applications in physics and engineering.
4. Understand the concept of an integral, and be able to compute the integral of various functions.

• **Standards Assessments:** At the end of each two-week module, you will have a standards assessment. These are chances for you to demonstrate that you fully grasp a learning objective of the course. Standards will be graded as Correct ( $\checkmark$ ) or Incorrect ( $\times$ ). There are 38 learning objectives in the course. All standards covered up to that point in the course will be available on each assessment. You may choose which problems you complete. Each objective must be completed twice, on separate assessments, in order to count as mastered. Certain more complicated problems may count as covering multiple objectives.

• **Team-Based Learning:** This course will be using a team-based learning (TBL) approach. TBL encourages self-directed learning and will help teach you how to apply what you learn in a collaborative environment. TBL requires you to be prepared for and attend classes. Using the TBL method will allow us to avoid long lectures so that we can dig into the more

complicated business of critical thinking about what we are learning. The course components will include the following:

- **Readiness Assessments (RA):** At the beginning of classes where there is an assigned reading due, we will have a closed-note Readiness Assessment (10 items). You will take this RA twice; you will complete it once as an individual (iRA), and then as a team (tRA). These quizzes will be scored immediately so you can appeal your scores on the RA if you believe the key is wrong or there is another correct answer listed. If you are absent, you will receive a zero for both the iRA and the tRA for that day; however, I will also drop your lowest iRA and tRA at the end of the year, so you can miss one without penalty. I do not allow makeups for these assessments.
- **Team Activities:** In most classes, we will have one or more application activities where you will need to work with your team to devise the best solution or approach to a selection problem. You will not need to work on these assignments outside of the classroom, although completing the required readings will be imperative for your success on these assignments. The grading for this will assess whether you have appropriately applied key concepts you've learned to the problem. You will sign in to a sheet with your team each day to indicate that you've completed the Activity. Each daily activity is worth 3 points.
- **Peer Evaluations:** Twice during the course, you will complete a peer review. These will be anonymous, but they will be shared with your teammates. The goal of this review is to give you an opportunity to provide constructive feedback to your team members. Your average rating on the second review will serve as a multiplier on your team performance score. If you do not complete the reviews, you receive a score of zero for your own review, which will lead to a failing grade in the course.

## Grading

Desired Grade	Objectives Mastered	Desired Grade	Objectives Mastered
<b>A</b>	35	<b>C</b>	27
<b>A-</b>	34	<b>C-</b>	26
<b>B+</b>	33	<b>D+</b>	25
<b>B</b>	31	<b>D</b>	23
<b>B-</b>	30	<b>D-</b>	22
<b>C+</b>	29	<b>F</b>	$\leq 22$

There are a total of 196 points available for Readiness Assessments and Team Activities. Grades are capped at the team score percentage (90% for an **A**, 80% for a **B**, etc.). A student whose team grade exceeds their standards grade, will have their grade raised by 1/3. For example, if a student mastered 33 objectives, but scored over 90% on the team grade, that student would receive an **A-**. On the other hand, if a student mastered 35 objectives, but only scored 70% on the team grade, that student would receive a **C**.