



## Course Syllabus: MTH 201-08 (Calculus)

Grand Valley State University, Fall 2018

Welcome to MTH 201! This course will introduce you to one of the most significant accomplishments of human history: **differential and integral calculus**. Calculus is **the study of changing quantities** and is an essential tool for science, mathematics, finance, and other subjects where things change continuously. MTH 201 will equip you with the tools you need to do rigorous work in your chosen field and will help you see the world in a whole new way.

**Important note:** This section (08) of MTH 201 uses a **hybrid** course format which blends the traditional in-person format with an online format. The majority of the lectures and other basic material are covered outside of class time through online activities. Class time is used to review, discuss, and practice the more difficult concepts, and to take assessments. In-class and out-of-class requirements are as follows:

- In-class requirements: Two 50-minute meetings per week (Monday and Wednesday) where we review, discuss, and practice concepts from the course. Students also take quizzes and other assessments during these times. (*1.67 hours per week*)
- Out-of-class requirements: Outside of class, students are required to complete textbook readings and video lectures, complete Guided Inquiry assignments that explore the readings and lectures, complete Labs, and complete online homework sets. Students are also expected to engage in online discussions and Q&A. (*12 hours per week*)

If you are uncertain that you can fulfill these requirements, please email me (below) or consider changing to a standard non-hybrid section.

**Instructor:** Robert Talbert, Ph.D., Professor of Mathematics.

- Office Location: MAK A-2-168
- Office Hours: Online hours 11:00-11:50 Tuesday/Friday; in-person hours to be determined.
- To sign up for an office hours appointment: Go to <https://talbertr.youcanbook.me/> . Drop-ins during office hours are welcome, but appointments get first priority.
- Email: [talbertr@gvsu.edu](mailto:talbertr@gvsu.edu) or [talbertr@mail.gvsu.edu](mailto:talbertr@mail.gvsu.edu) (they go to the same inbox)
- Phone: (616)331-8968

**Note on instructor availability:** To maintain a healthy work-life balance, I place reasonable limits the times and days when I do work. Specifically, **I do not typically check email or other messages between 9pm and 6am on weekdays, and I do not typically check these at all on**

**weekends.** If you send a message during my “off” hours, I will get to it as soon as I am back online. To compensate for these limits, **you can expect a response to any message within 6 hours of my reading it** if it requires a response; we also have online course tools where you can ask questions to the entire class at any time, making it more likely to get a quick response. **I encourage each of you, as well, to set similar limits on work for family, rest, and personal time.**

**Course meetings:** In-person meetings are Monday/Wednesday 11:00-11:50am in MAK BLL-116. The 11:00-11:50 time slot on Tuesday/Friday is available for you to work with live online help available, but there are no scheduled group meetings during that time.

**Textbook:** The course text is *Active Calculus*, v.2.0 by Matt Boelkins. The text is available for free, either as a PDF or as an interactive HTML document. The PDF may be accessed here: <https://scholarworks.gvsu.edu/books/15/> The interactive HTML version may be accessed here: <https://activecalculus.org/single/> **The interactive HTML version is recommended** because it contains useful, interactive features such as practice exercises that the PDF doesn't have. Both formats may also be accessed through the course Blackboard site. To order a paper copy, please contact me for information.

**Course Goals:** The end goal of MTH 201 is to equip each student with a strong fluency in the concepts and computations of calculus, for use in appreciating the world and in preparation for future professional work. At the completion of this course, you will be able to do the following:

- Compute derivatives of functions using graphical, numerical, and symbolic representations.
- Apply the concept of a derivative to set up and solve problems involving rates of change.
- Compute definite integrals of functions using graphical, numerical, and symbolic representations.
- State, explain, and apply the Fundamental Theorem of Calculus.
- Interpret the meaning of a derivative or integral computation in context and in a way that is clear to a non-expert.
- Use appropriate technological tools to model and solve problems involving functions, limits, derivatives, and integrals.
- Connect the ideas of calculus with your own personal and professional interests.
- Demonstrate competence and continued growth in self-teaching technical material, managing time and tasks, and constructive educational interactions with others.

## Graded Work and Grades in MTH 201

Your course grade in MTH 201 will be determined by the quantity and quality of evidence you can provide that you have mastered the concepts of the course. There are four primary kinds of assignments that will provide that evidence:

<u>Assignment</u>	<u>What it is</u>	<u>How it's graded</u>
Guided Inquiry	Pre-class assignments introducing you to new material and do some initial learning so we can focus class time on harder concepts.	<b>Satisfactory (S)</b> or <b>Unsatisfactory (U)</b>
Online Homework	Practice problems done online to build skill with computation.	Points (one point per problem)
Labs	Deep dives on calculus applications involving real data and technology.	<b>Satisfactory (S)</b> , <b>Progressing (P)</b> or <b>Incomplete (I)</b>
Learning Target quizzes	Short quizzes over one of the 24 Learning Targets in the course	<b>Satisfactory (S)</b> or <b>Progressing (P)</b>

Please note that only Online Homework is graded using points. The other assignments use a two- or three-level rubric. The details for what constitutes “Satisfactory” and other grades are given in Appendix A of this syllabus.

**Learning Targets:** There are 24 Learning Targets set up for the course that cover the major skills you should learn. Ten (10) of these are **Core** Learning Targets; the remaining 14 are **Supplemental** Learning Targets. The list of Learning Targets is given in Appendix B of this syllabus. Your progress on each target will be gauged using a brief quiz, one quiz per Learning Target, consisting of tasks for you to do that can provide evidence that you've met the Learning Target. Those quizzes are given in our face-to-face meetings, either on designated quiz sessions (15 minutes at the end of a class period) or in 50-minute long assessment sessions. The scheduled dates for quiz and assessment periods are given on the Course Calendar and in Appendix C of the syllabus.

**Completing and Mastering Learning Targets:** When you take a quiz over a Learning Target and earn a “Satisfactory” grade on it, you are marked as having **Completed** that Learning Target. Taking a second quiz over the same Learning Target and earning “Satisfactory” on the second quiz will upgrade your mark as having **Mastered** that Learning Target. Second quizzes on Learning Targets can be taken during certain designated quiz sessions and during any 50-minute assessment session. Learning Targets that have been attempted but not completed yet will be recorded as “In progress”.

**Final Exam:** We will also have a final exam on **Wednesday, December 12 from 10:00-11:50am.**

**Experience Points:** In addition to regular graded work, you'll be awarded experience points (XP) for completing tasks that help you stay connected and engaged in the course, such as completing surveys, participating in group activities, and so on.

**How your grade is determined in MTH 201:** Determining your course grade involves two steps. First, compute your base grade which is A, B, C, D, or F without any plus/minus additions. The table below shows the requirements for each base grade:

<u>To earn:</u>	<u>Do all of the following:</u>
<b>A</b>	<ul style="list-style-type: none"><li>● <b>Complete</b> all 10 Core Learning Targets, and <b>Master</b> at least 8 of them.</li><li>● <b>Complete</b> 12 Supplemental Learning Targets, and <b>Master</b> at least 6 of them.</li><li>● Earn <b>Satisfactory</b> on at least 7 Labs.</li><li>● Earn <b>Satisfactory</b> on at least 18 Guided Inquiry assignments.</li><li>● Have a final online homework grade of at least 90%.</li></ul>
<b>B</b>	<ul style="list-style-type: none"><li>● <b>Complete</b> all 10 Core Learning Targets, and <b>Master</b> at least 5 of them.</li><li>● <b>Complete</b> 10 Supplemental Learning Targets, and <b>Master</b> at least 3 of them.</li><li>● Earn <b>Satisfactory</b> on at least 5 Labs.</li><li>● Earn <b>Satisfactory</b> on at least 14 Guided Inquiry assignments.</li><li>● Have a final online homework grade of at least 80%.</li></ul>
<b>C</b>	<ul style="list-style-type: none"><li>● <b>Complete</b> all 10 Core Learning Targets.</li><li>● <b>Complete</b> 8 Supplemental Learning Targets.</li><li>● Earn <b>Satisfactory</b> on at least 3 Labs.</li><li>● Earn <b>Satisfactory</b> on at least 10 Guided Inquiry assignments.</li><li>● Have a final online homework grade of at least 70%.</li></ul>
<b>D</b>	<ul style="list-style-type: none"><li>● <b>Complete</b> at least 5 Core Learning Targets.</li><li>● Earn <b>Satisfactory</b> on at least 1 Lab.</li><li>● Have a final online homework grade of at least 60%.</li></ul>
<b>F</b>	<b>(Given if not all the requirements for a D are met.)</b>

Note: The initial schedule has 21 Guided Inquiry assignments and 9 Labs. If these numbers change, the table above will be updated.

Once your base grade is determined, determine any plus/minus modifications using the following:

Add a <b>plus (+)</b> if:	Your final exam grade is at least 85%, <i>and</i> you earn at least 85 XP.
Add a <b>minus (-)</b> if:	Your final exam grade is 50% or lower, <i>or</i> you earn 50 XP or fewer.

*Please note: These rules cannot be used to earn A+ or D-, since those grades do not exist at Grand Valley State University.*

If none of the plus/minus rules apply to you, then your course grade is just your base grade.

Also please note, you will be able to revise and reattempt almost any form of work you do in the course, as described in the next section.

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## **Revision and Reassessment in MTH 201**

The grading system in our course insists that you show consistent excellence in *all* assignments in the course — outstanding work on quizzes, for example, does not “bring up” poor work on labs. This can be challenging, but the course also provides a robust system of revision and reassessment for most graded tasks, so that if you aren’t happy with a grade on an assignment, you’ll have multiple chances to try again or fix any mistakes.

Here’s how this works with the various assignments in the course. (For the purposes of these policies, a “week” in the course is defined to run from 12:01am Eastern time on Sunday to 11:59pm Eastern time Saturday.)

**Online homework:** When you submit online homework, you receive instant feedback on which answers were right and which ones were wrong. You may reattempt any online homework set as many times as you want until the deadline for the set. (After the deadline, no revision is allowed and your grade is final.)

**Labs:** If you submit a lab and receive either a Progressing or Incomplete grade, you will receive instructor feedback on your work, and you can use the feedback to make corrections and then resubmit your work for regrading. You may submit up to one Lab revision per week for regrading.

**Learning Target quizzes:** Quizzes that receive a Progressing grade may be reattempted in two different ways. One way is to request a retake of that quiz during a later quiz or assessment period. Any quiz can be retaken during a 50-minute assessment session; certain designated 15-minute quiz sessions (announced in advance) can also be used. A second way is to reattempt a quiz during office hours (in person or during the TF online times), by working out quiz problems while I watch and assess your work. Reattempts of quizzes in either form will cover the same Learning Target and have similar problems but will not be identical to past quizzes.

Reattempts of Learning Target quizzes done in office hours are subject to some restrictions:

- You must schedule a 15-minute appointment for quiz reattempts using <https://talbertr.youcanbook.me/>.
- You may schedule no more than two such appointments per week.
- You may attempt no more than two retakes during any one 15-minute appointment.
- The 15-minute length of the appointment is firm; no extra time will be allowed, including if a student arrives late to the appointment.
- Failing to appear for an appointment may result in a ban from office hours quiz retakes.
- Office hours appointments are available on a first-come, first-served basis.

Other restrictions may be put in place at the professor's discretion.

**Note:** Guided Inquiry assignments and course experiences that earn XP may not be revised or resubmitted.

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## Technology Policies

Given the hybrid format of the course, technology plays a larger role in our learning activities than in a traditional section. Students in this section will be doing a majority of their work outside of face-to-face meetings, so a reasonable comfort level using multiple digital tools is expected. Students should be fluent with basic computer tasks such as getting online, creating and opening documents, saving documents to different formats (such as PDF), and so on. I am very happy to help you with any basic task; just ask (in person, email, or on Slack).

Further, GVSU requires that students taking online and hybrid courses satisfy the following minimal technology requirements:

- Access to a **high-speed internet connection** for accessing multimedia.
- An active **GVSU email account** for correspondence and course notifications.
- Access to the GVSU **Blackboard** system (see below).
- Access to a **computer or tablet device sufficiently equipped to work with all digital tools in the course** including Blackboard.
- A **modern web browser** such as Chrome or Firefox.

**Blackboard:** The central repository for all course materials and information is our Blackboard site, accessible through <https://mybb.gvsu.edu>. The Blackboard site will house your grades (except online homework, which is kept on the WeBWork site); links to handouts, videos, and other materials; and other course tools. We will often use other tools such as Google Drive and Slack, but these are all linked to the Blackboard site, so keeping track of multiple websites is not necessary.

**WeBWork:** Online homework uses the WeBWork homework system, accessible through <https://webwork-math.gvsu.edu/webwork2> (also found in the main sidebar on the Blackboard

site). WeBWork problems are to be done on paper in your own notes, then the answers are put into the online system and are automatically graded. The grades for WeBWork sets are stored on the WeBWork site and will not be put into the Blackboard gradebook.

**Slack:** To make it easy to communicate with me and each other in between face-to-face meetings, we will use Slack, a popular group communications tool that combines chat with discussion board functions. The class workspace is found at <http://mth201f18.slack.com> (and on the Blackboard site), and students will receive email invitations to join prior to the start of the semester. Please also put the Slack app on all your mobile devices.

**Other course tools:** We will frequently make use of other digital tools for the course. These include Desmos (<https://www.desmos.com>) for graphing, and Wolfram|Alpha (<https://www.wolframalpha.com>) for symbolic computation.

**Graphing calculators:** Graphing calculators are not required. We will be using Desmos and other tools in place of graphing calculators for coursework.

**Requirements for electronic communication:** To keep up to speed with happenings in the course, students are required to check their GVSU email *and* the MTH 201 Slack workspace at least once per day for announcements, discussion, and other course communication. All important course communication will take place through one or both of these channels. Each student is responsible for staying updated on course communication and taking action on any actionable items. I also strongly recommend each student use a calendar (paper or electronic) to keep track of dates and time-sensitive course assignments.

**Expectations for online behavior:** When communicating by Slack or email, students are expected to show respect to others and to behave as emerging professionals. Specifically:

- Students should attempt to find their own answers first before asking for online help.
- When posting, be precise, informative, and brief.
- Be mindful that online communication can easily be taken the wrong way, so be careful of sarcasm and other forms of language. Use emoji.
- On Slack, use channels appropriately; for example do not post technology questions in the #announcements channel.
- Be constructive in your posts. Do not insult or belittle others, and do not use the course tools to vent frustration or to complain.
- Absolutely no abusive behavior or language will be tolerated, including abusive language used in private direct messages on Slack.

**Technology during face-to-face meetings:** Please use whatever technology helps you learn during our face-to-face meetings. The only restriction on such use is that you may not engage in behavior that distracts others from learning.

**Technology during Learning Target quizzes:** No technological tools are allowed during Learning Target quizzes. The problems on these quizzes will be such that these tools are unnecessary.

**Technology issues and submitting work:** Guided Inquiry, Online Homework, and Labs are all submitted electronically. It is the student's responsibility to make sure these items are submitted on time, through any means necessary, even if technology issues arise. If a tech issue arises that prevents your being able to submit work on time, it is your responsibility to find another way to get it to me (for example, via an email attachment). **Technology issues that are avoidable or resolved with a simple work-around will not be considered valid grounds for a deadline extension.** For example, if you are trying to upload a Lab to Blackboard and Blackboard won't accept the file, you should try again later or send the file as an email attachment until you can upload it successfully.

**Tech support:** Please note that **I (Prof. Talbert) do not provide tech support for course technology.** Instead, you should contact the following:

- For **Blackboard** issues, contact the GVSU Blackboard Help Desk at 616-331-8526 or [bbhelp@gvsu.edu](mailto:bbhelp@gvsu.edu).
- For issues involving **your computer or internet connection**, please contact an appropriate Information Technology (IT) professional. For issues encountered on campus, this would be the GVSU IT Help Desk, 616-331-2101, [helpdesk@gvsu.edu](mailto:helpdesk@gvsu.edu), or live chat at <https://www.gvsu.edu/it/helpdesk/>.
- For issues with **other course tools**, try leaving a question in a thread on the #tech channel on Slack and direct it to all students. It will then be seen by everyone, and you may get help then. You may also find answers by Googling and looking at discussion forums for the tool you are interested in.

Also remember that many issues encountered with Internet tools can be resolved by waiting a few minutes and trying again after refreshing your browser, or changing locations.

**The #tech channel:** The **#tech** channel on Slack is a place for any and all questions about course technology. Please consider asking all such questions there first, as your question will be seen by the entire class and therefore be more likely to get a quick and good answer.

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### **Policy on Collaboration and Academic Honesty**

You are allowed and encouraged to work with others on most of your assignments (the exception being Learning Target assessments; see below). However, the final product that you submit for feedback must be the result of your own efforts. Therefore **you may share ideas and strategies with others, but collaboration on the actual finished product you submit is not allowed.** Your work is expected to be the product of your own thinking, written and explained in your own words with no parts of the work copied from external sources such as



books or websites, and done clearly enough in your own mind that you could explain the work from start to finish if asked.

Unlike other assignments, your work on Learning Target assessments *must* be done individually, and all collaboration is prohibited.

Violation of this policy is considered “academic dishonesty” and carries with it strong punitive measures mandated by Grand Valley State University, including possible automatic failure of the course or suspension from the university. For details, please see Section 4 of the GVSU Student Code: <http://bit.ly/2NLQlot> If you are considering a course of action that might put you in danger of committing academic dishonesty, or if you are unsure if your actions might violate the policy, **STOP** and contact the professor for help or clarification.

### Other Course Policies

**Attendance:** Attendance at the Monday/Wednesday face-to-face meetings is required and is particularly important given the hybrid format of the course. Attendance will be taken at each of these meetings, and attendance and participation will earn XP. You are *not* required to be online during 11:00–11:50 on Tuesday or Friday; these times are simply there as pre-scheduled working hours during which live office hours help is available.

**Absences:** Absences from the M/W meetings result in a forfeiture of the XP earned during those meetings. There will be other opportunities to earn XP through other means in the course, so no makeups are allowed. If you are absent from a quiz or assessment period, you may attempt the Learning Targets from those periods at a later class period; makeup sessions are not available outside ordinary class time. An absence from the final exam will result in a 0 on the exam.

**Late work:** Guided Inquiry, WeBWork, and Lab assignments all have deadlines. You are required to turn in your work prior to those deadlines, and late work will not be accepted. If you are unable to turn in work before its deadline due to an extraordinary circumstance, please contact me and explain the circumstance, and I will decide whether to grant an extension on a case-by-case basis (based on whether the situation is truly extraordinary, unavoidable, and made it impossible to turn the work in on time).

**For students with special needs:** Any student who requires accommodation because of a physical or learning disability must contact Disability Support Resources (<http://www.gvsu.edu/dsr>) at 616-331-2490 as soon as possible. After you have documented your disability, please make an appointment or see me to discuss your specific needs.

**Changes to this syllabus or the course calendar:** Some changes may be made to the syllabus and/or course calendar during the semester. I reserve the right to make reasonable

modifications to either; if possible and sensible, I will seek student input before making them. All such changes will be announced through course announcements and in face-to-face meetings.

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Acknowledgements:

- The icon on page 1 is from <https://www.albert.io/ap-calculus-ab-bc>.
- The description of the hybrid format is due to Prof. Alison Kelly and borrowed from *The Blended Course Design Workbook* by Kathryn Linder.
- The statement on collaboration and academic honesty is adapted from Prof. Jonathan Hodge.

## Appendix A: Grading Standards

**Guided Inquiry:** Guided Inquiry assignments are graded either **Satisfactory (S)** or **Unsatisfactory (U)** and are graded on the basis of completeness, effort, and timeliness.

<u>Mark:</u>	<u>Description:</u>
<b>S</b>	Every item on the assignment has a response that represents a good-faith effort to answer correctly; and the work is submitted before the deadline.
<b>U</b>	No work submitted; or work is submitted that is late, has at least one blank response, or at least one response that is not a serious attempt.

**Online Homework (WeBWork):** Online homework is graded using points. Typically, WeBWork problems are worth one point each. One point is awarded if the answer for the problem is correct (or in the case of multiple answers, all of them are correct), and zero points are awarded otherwise. In some multi-part problems, partial credit is awarded.

**Labs:** Labs are graded either **Satisfactory (S)**, **Progressing (P)**, or **Incomplete (I)**. The base criteria for all labs are as follows. Some labs may have additional criteria.

<u>Mark:</u>	<u>Description:</u>
<b>S</b>	The submission gives complete, clearly-written, and well-reasoned responses to all lab tasks; the writeup is neatly done and looks professional; the work uses computer technology in an effective and appropriate way.
<b>P</b>	The submission is complete, neatly and professionally written up, and uses computer technology effectively and partial understanding of concepts is evident; but there are issues in the writing, mathematics, or reasoning that require revision.
<b>I</b>	The submission has significant omissions or widespread issues so that not enough information is present to determine whether there is adequate understanding.

**Learning Targets:** Assessments of Learning Targets are graded either **Satisfactory (S)** or **Progressing (P)** using criteria spelled out individually for each target. Please see the Learning Targets area on Blackboard for more details.

## Appendix B: Learning Targets

To **COMPLETE** a Learning Target: Pass an assessment on that target during quiz or assessment times. Check off one of the boxes to the left of that target.

To **MASTER** a Learning Target: Pass a second assessment on that target quiz or assessment times. Check off the second box next to that target.

### CORE learning targets

<input type="checkbox"/> <input type="checkbox"/>	<b>C1</b>	<b>Limits: Graphical.</b> Compute the limit of a function at a specific point using the graph of the function.
<input type="checkbox"/> <input type="checkbox"/>	<b>C2</b>	<b>Derivatives using the definition.</b> Find the derivative of a function either at a point, or as a function, using the definition of the derivative.
<input type="checkbox"/> <input type="checkbox"/>	<b>C3</b>	<b>Interpreting derivative information.</b> Interpret or apply information about a function and its first two derivatives; or, draw conclusions about a function and its first two derivatives given information about the function.
<input type="checkbox"/> <input type="checkbox"/>	<b>C4</b>	<b>Derivatives of basic functions.</b> Compute derivatives of constant, polynomial, exponential, and trigonometric functions.
<input type="checkbox"/> <input type="checkbox"/>	<b>C5</b>	<b>Product and Quotient Rules.</b> Compute derivatives of products and quotients of functions.
<input type="checkbox"/> <input type="checkbox"/>	<b>C6</b>	<b>Chain Rule.</b> Compute derivatives of composites of functions.
<input type="checkbox"/> <input type="checkbox"/>	<b>C7</b>	<b>Tangent lines.</b> Find the tangent line to the graph of a function at a specific point on the graph.
<input type="checkbox"/> <input type="checkbox"/>	<b>C8</b>	<b>Local information of functions: Graphical.</b> Given the graph of a function, identify intervals of increase and decrease, concavity, local extrema, critical points, and inflection points.
<input type="checkbox"/> <input type="checkbox"/>	<b>C9</b>	<b>Areas and integrals.</b> Interpret areas under graphs as definite integrals, and use a graph of a function to compute a definite integral.
<input type="checkbox"/> <input type="checkbox"/>	<b>C10</b>	<b>Fundamental Theorem of Calculus.</b> Use the Fundamental Theorem of Calculus to compute simple integrals.

### SUPPLEMENTAL Learning Targets

<input type="checkbox"/> <input type="checkbox"/>	<b>S1</b>	<b>Average rate of change.</b> Find the average rate of change of a function over an interval.
<input type="checkbox"/> <input type="checkbox"/>	<b>S2</b>	<b>Limits: Symbolic.</b> Compute the limit of a function at a specific point using algebra.

<input type="checkbox"/> <input type="checkbox"/>	<b>S3</b>	<b>Local linearizations.</b> Find a local linearization of a function at a specific point.
<input type="checkbox"/> <input type="checkbox"/>	<b>S4</b>	<b>Derivatives of inverse functions.</b> Compute derivatives of inverse functions, including logarithmic and inverse trigonometric functions.
<input type="checkbox"/> <input type="checkbox"/>	<b>S5</b>	<b>Implicit differentiation.</b> Compute derivatives of functions given implicitly.
<input type="checkbox"/> <input type="checkbox"/>	<b>S6</b>	<b>Indeterminate forms and l'Hopital's Rule.</b> Compute limits of indeterminate forms using l'Hopital's Rule.
<input type="checkbox"/> <input type="checkbox"/>	<b>S7</b>	<b>Local information of functions: Symbolic.</b> Given a formula for a function, identify intervals of increase and decrease, concavity, local extrema, critical points, and inflection points.
<input type="checkbox"/> <input type="checkbox"/>	<b>S8</b>	<b>Absolute extrema.</b> Find extreme values of a continuous function on a closed interval.
<input type="checkbox"/> <input type="checkbox"/>	<b>S9</b>	<b>Applied optimization.</b> Set up and solve applied optimization problems.
<input type="checkbox"/> <input type="checkbox"/>	<b>S10</b>	<b>Related rates.</b> Set up and solve related rates problems.
<input type="checkbox"/> <input type="checkbox"/>	<b>S11</b>	<b>Newton's Method.</b> Use Newton's Method to approximate the roots of a function.
<input type="checkbox"/> <input type="checkbox"/>	<b>S12</b>	<b>Riemann sums,</b> Estimate a definite integral using a left, right, and midpoint Riemann sum.
<input type="checkbox"/> <input type="checkbox"/>	<b>S13</b>	<b>Average value.</b> Find the average value of a function on an interval.
<input type="checkbox"/> <input type="checkbox"/>	<b>S14</b>	<b>Total change.</b> Find the total amount by which a function changes on an interval using a definite integral.

## Appendix C: Important Dates and Deadlines

Below is an overview of assignment due dates and other important dates for the class. **This is not a complete course calendar, and changes may be made later.** For a complete course calendar, click on the “Course Calendar” link on Blackboard. Days of the week are abbreviated Su, M, T, W, R, F, Sa; the abbreviation “LT” means “Learning Target”, and “WW” means “WeBWork”.

<u>Week</u>	<u>Dates</u>	<u>In class</u>	<u>Outside of class</u>
1	8/27--8/31	n/a	<input type="checkbox"/> Syllabus quiz (T) <input type="checkbox"/> Review WeBWork (F) <input type="checkbox"/> Orientation assignment (F)
2	9/3--9/7	<input type="checkbox"/> LT quizzes: S1 + others (W)	<input type="checkbox"/> Guided Inquiry 1.1 (T) <input type="checkbox"/> Guided Inquiry 1.2 (R) <input type="checkbox"/> WW 1 (F) <input type="checkbox"/> Week 2 feedback (F)
3	9/10--9/14	<input type="checkbox"/> LT quizzes: C1, S1, S2 (W)	<input type="checkbox"/> Guided Inquiry 1.3 (Su) <input type="checkbox"/> Guided Inquiry 1.4 (M) <input type="checkbox"/> WW 2 (T) <input type="checkbox"/> WW 3 (F)
4	9/17--9/21	<input type="checkbox"/> LT quizzes: C2, C3 (W)	<input type="checkbox"/> Guided Inquiry 1.5 (Su) <input type="checkbox"/> Guided Inquiry 1.6 (M) <input type="checkbox"/> Lab 1 (M) <input type="checkbox"/> WW 4 (T) <input type="checkbox"/> WW 5 (F)
5	9/24--9/28	<input type="checkbox"/> Assessment period for LT quizzes (W)	<input type="checkbox"/> Guided Inquiry 1.7/1.8 (Su) <input type="checkbox"/> Lab 2 (M) <input type="checkbox"/> WW 6 (T) <input type="checkbox"/> WW 7 (F)
6	10/1--10/5	<input type="checkbox"/> LT quizzes: C4, C5, S3 (W)	<input type="checkbox"/> Guided Inquiry 2.1 /2.2 (Su) <input type="checkbox"/> Guided Inquiry 2.3/2.4 (M) <input type="checkbox"/> Lab 3 (M) <input type="checkbox"/> WW 8 (T) <input type="checkbox"/> WW 9 (F) <input type="checkbox"/> Week 6 feedback (F)
7	10/8--10/12	<input type="checkbox"/> LT quizzes: C6, C7 (W)	<input type="checkbox"/> Guided Inquiry 2.5 (Su) <input type="checkbox"/> Lab 4 (M) <input type="checkbox"/> WW 10 (T) <input type="checkbox"/> Guided Inquiry 2.6 (R) <input type="checkbox"/> WW 11 (F)
8	10/15--10/19	<input type="checkbox"/> LT quizzes: S4, S5, S6 (W)	<input type="checkbox"/> Guided Inquiry 2.7 (Su) <input type="checkbox"/> Guided Inquiry 2.8 (M)

			<input type="checkbox"/> WW 12 (T) <input type="checkbox"/> WW 13 (F)
9	10/22--10/26	<input type="checkbox"/> LT quizzes: C8, S7 (W)	<input type="checkbox"/> Guided Inquiry 3.1 (Su) <input type="checkbox"/> Lab 5 (M) <input type="checkbox"/> WW 14 (T) <input type="checkbox"/> WW 15 (F) <input type="checkbox"/> <i>Last day to drop with a "W" (F)</i>
10	10/29--11/2	<input type="checkbox"/> Assessment period (W)	<input type="checkbox"/> Guided Inquiry 3.3 (Su) <input type="checkbox"/> WW 16 (T) <input type="checkbox"/> Guided Inquiry 3.4 (R) <input type="checkbox"/> WW 17 (F)
11	11/5--11/9	n/a	<input type="checkbox"/> Guided Inquiry 3.5 (T) <input type="checkbox"/> WW 18 (T) <input type="checkbox"/> Lab 7 (W) <input type="checkbox"/> WW 19 (F)
12	11/12--11/16	<input type="checkbox"/> LT quizzes: S12 + others	<input type="checkbox"/> Guided Inquiry 4.1 (Su) <input type="checkbox"/> Guided Inquiry 4.2 (M) <input type="checkbox"/> WW 20 (T) <input type="checkbox"/> WW 21 (F) <input type="checkbox"/> Week 12 feedback (F)
13	11/19--11/23	<input type="checkbox"/> Assessment period (M)	<input type="checkbox"/> Response form from T online class work (W)
14	11/26--11/30	<input type="checkbox"/> LT quizzes: C9, C10, S13	<input type="checkbox"/> Guided Inquiry 4.3 (Su) <input type="checkbox"/> Guided Inquiry 4.4 (M) <input type="checkbox"/> WW 22 (T) <input type="checkbox"/> WW 23 (F)
15	12/3--12/7	<input type="checkbox"/> Assessment period (M) <input type="checkbox"/> Assessment period (W)	<input type="checkbox"/> Lab 9 (M) <input type="checkbox"/> WW 24 (T) <input type="checkbox"/> Written solutions for WW 24 (optional; W) <input type="checkbox"/> WW 25 (F) <input type="checkbox"/> Course reflection (F)

**Assessment period dates:** September 25, October 30, November 20, December 3, December 5.

**Final exam:** Wednesday, December 12 from 10:00-11:50am.