

MTH 201: Calculus

Fall 2020, Grand Valley State University

START HERE

Welcome to Calculus! I'm Robert Talbert, a professor in the Mathematics Department, and I am grateful that you are signed up for the course and am looking forward to working with you this semester.

Before reading any further, here are some first things to know:

1. **My highest priority this semester is your success in this course.** I am committed to helping you be successful in MTH 201 this semester. "Success" means more than just good grades. It means that you are being **challenged** to grow as a learner, that you are **engaging actively** with tasks that feed your growth, and that you are creating **excellent work** in mathematics by completing challenging Calculus-related tasks with a appropriate level of support. It also means that you are **building your lifelong learning skills** so that once the course is over, you are better and stronger as a learner and can continue to **learn new things independently**, and especially go on to **success in courses that have MTH 201 as a prerequisite**.
2. **College level mathematics is more than just computation.** On the pathway to "success" as outlined above, you will be asked to do more than just perform computations. You will be working on **explaining the meaning** of mathematical processes and results in oral and written forms to different audiences; **working on realistic applications** of basic skills to authentic problems; **extending basic ideas** to more advanced concepts; and **seeking true understanding** of underlying concepts. In fact, many of the computations you might do with algebra in high school level mathematics will be automated through computers in MTH 201, and your work will mostly focus on these higher-level tasks.
3. **You can expect to be challenged intellectually throughout this course.** None of these elements of "success" come easily. They require dedicated devotion of time and energy to wrestling with the concepts and tasks in the course. This will require you to leave your comfort zones on a regular basis. You may find that you need to rewire your entire process for learning things. You will need to stay constantly engaged with the course through participation in class meetings and on the class discussion board — asking questions, seeking understanding, and giving help.
4. **Intellectual struggle is normal and healthy in a challenging course.** Since none of this is easy, you can expect at times to feel like you are really struggling with the material — even if in your earlier math courses you might never have experienced struggle. **This is normal and healthy.** Legitimate struggle is actually a sign you are doing things right, and it's a signal you're about to experience explosive growth. When you are building physical muscles, the point at which you are growing the most is the moment you experience the greatest strain and fatigue. **Our class is a safe place for you to experience those struggles.**
5. **You have a lot of help available to you as you work.** Throughout the semester, you will be challenged but also given a lot of support to help you rise to the challenge. I will be readily available to help in

several channels; your classmates will be available for help through structured and informal support groups; and the GVSU Math Department provides free help through the Math Center. **Everyone in the course has your back.**

6. **You will find MTH 201 to be very enjoyable if you embrace the challenge.** Although hard work doesn't always feel good in the moment, by embracing the challenge and committing to learning Calculus, I think you will find that **growth is fun** and **Calculus is really interesting stuff.**

Course information

Instructor: Robert Talbert, Ph.D., Professor of Mathematics. Email: talbertr@gvsu.edu. Phone: 616.331.8968.

Office: My office is **Mackinac Hall C-2-513**. However, all student meetings this semester will be conducted online unless you have a specific need that requires a physical meeting.

Open drop-in hours: Monday through Thursday, 1-1:50pm, using the link <http://gvsu.edu/s/1qX> and password **growthmind**. **You do not need an appointment.** If you cannot attend open drop-in hours, you can contact me by email, through a Campuswire direct message, or by scheduling an appointment at <http://rtalbert.youcanbook.me>.

Availability: I typically only check email and other messages between 6am and 6pm on weekdays and once on Saturday mornings. If you send a message that needs a response during those times, you can expect to get a response within 6 hours. Otherwise you can expect one when I am back online.

Face-to-face Meetings: Your section is split into two groups ("Red" and "Blue") and the different groups take turns meeting face-to-face (F2F) and working online. The time and location of your F2F meetings depends on your section and group:

Section	Red group	Blue group
02	Monday/Wednesday 10:00-10:50am, Mackinac Hall D-1-135	Tuesday/Thursday 10:00-10:50am, Mackinac Hall D-1-135
04	Monday/Wednesday 3:00-3:50pm, Mackinac Hall A-1-165	Tuesday/Thursday 3:00-3:50pm, Mackinac Hall A-1-165

Textbook: *Active Calculus* (2018 edition) by Matt Boelkins. The textbook is freely available online at <https://activecalculus.org/ACS.html>. **This online version is preferred.** There is also a PDF version available, and instructions for ordering a printed copy, at <https://activecalculus.org/>.

Course website and discussion board: All course announcements, assignments, and grades will be communicated using the course **Blackboard** site available at <http://mybb.gvsu.edu>. All other course communications will be available through **Campuswire**, our class discussion tool; to join, go to <https://campuswire.com/p/GAD2DF67E> and use the code 7913.

Course calendar: A Google Calendar, with all due dates and other important time-sensitive information posted on it, is available on Blackboard in the left sidebar. **Be sure to check the calendar once daily** for upcoming events. The calendar is kept up-to-date constantly and **in cases of apparent conflicts in times or dates, the calendar is considered to be correct always.**

Technology: To use the course tools, you will need to have access to the following:

- **A laptop or tablet device**, preferably one with a **touchscreen that allows writing on the screen with a stylus**. Please plan on bringing this device with you to all F2F meetings.
- **A modern web browser**. Chrome is preferred, but browsers such as Firefox and Edge are also fine.
- **Reliable access to high-speed internet**.
- **An active GVSU network account** so that you can access email, Blackboard, and Google Docs.

If you have any issue with accessing any of the above, please let me know as soon as possible.

Course overview and expectations

Learning objectives: By the end of the course, you will be able to:

- Use **functions** and other pre-Calculus mathematics proficiently.
- Calculate, use, and explain the concept of **limits**.
- Explain and interpret the meaning of the **derivative** of a function.
- Use **shortcuts** to calculate derivatives efficiently.
- Use derivatives to solve authentic real-life **application problems**.
- Use **definite integrals and the Fundamental Theorem of Calculus** to find areas and total change.

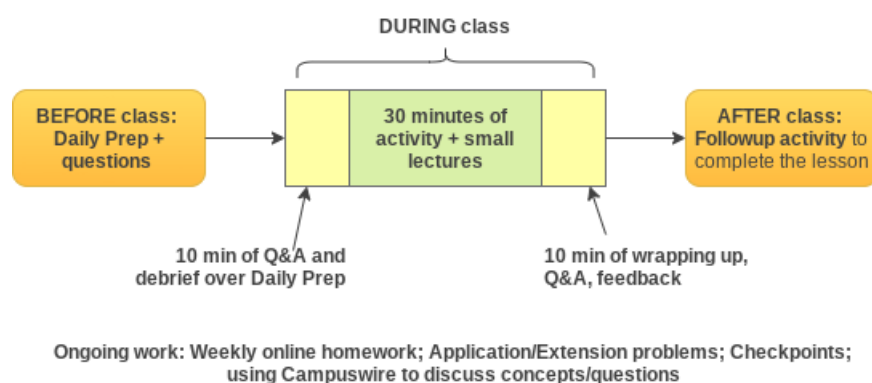
A full list of official departmental objectives for MTH 201 can be found [here](#).

Your progress toward these course objectives will be tracked using **Learning Targets**. There are 23 individual Learning Targets covering all the major skills in the course; a complete list of these is at the end of this syllabus.

Structure and flow of the course: Your work in the class will follow a pattern that will involve you **before**, **during**, and **after** our meetings:

- **BEFORE each class:** You'll complete a **Daily Prep** assignment in which you'll get familiar with the basic concepts of the upcoming lesson. Daily Prep assignments will typically be due by 11:59pm ET the night before the lesson; you'll be able to work ahead if you want.
- **DURING each class:** Class meetings will typically start with 10 minutes for going over the Daily Prep assignments and fielding questions. Then we will spend around 30 minutes doing activities together on the harder concepts from the material. Then we will typically spend 10 minutes wrapping up, going through some of the main points of the activity, taking short ungraded quizzes to give you feedback on your learning, and getting your feedback on the lesson.
- **AFTER each class:** Only about half the lesson is covered during the in-class session. The rest of the lesson is learned through **Followup Activities** that you will do asynchronously (outside of class on

your own schedule).



This pattern repeats for each F2F meeting that you have with your group. Finally, there is ongoing work outside the flow of class meetings, such as online homework and application/extension problems.

Student expectations: All students in the course are expected to do the following:

- **Check email, Blackboard announcements, and Campuswire posts at least once a day** — preferably more often — for information, hints, questions, and engagement opportunities. Especially, given the unpredictable nature of the ongoing pandemic, it's imperative that you stay consistently up to date on course information. All important announcements will be posted (and sent to your GVSU email and cross-posted to Campuswire) as soon as possible; you're responsible for seeing these announcements and taking action. "I didn't see the announcement" will not be accepted for missed work or other inactions!
- **Check the calendar daily for upcoming due items and other events.**
- **Asking for help when you need it** through drop-in visits or Campuswire posts; also **giving help to others** when you see a question on Campuswire that you can answer.
- **Be kind to each other and help each other.** These are rough times and the course material can be difficult. Let's all agree to be civil, helpful, positive, and productive all semester long.

The work you'll do in the course

You will be engaging with several different kinds of activities in the course, both to learn the material and to demonstrate how well you have learned it. These include:

- **Daily Preparation (DP):** You will complete these before each of your F2F meetings. Each Daily Prep assignment involves reading, video-watching, or interaction and then working exercises on basic learning objectives.
- **Followup Activities (FA):** Followup activities will complete the lesson for each part of a module and are done after a F2F meeting. They're the equivalent of a second class meetings' worth of active learning tasks, only they're done asynchronously online.
- **Learning Target Checkpoints:** A major part of the course is your demonstrating progress toward the 23 different Learning Targets. The main way you'll do this is through occasional take-home assessments called **Checkpoints**. Each checkpoint contains **one problem per Learning Target that has**

been covered up to that point, focusing only on that Learning Target. More details on Checkpoints, how they are constructed, and how they are graded are given in the “How your work is graded” section.

- **Application/Extension Problems (AEPs):** AEPs are more extensive problems that require applying or extending the basic course knowledge from the Learning Targets.
- **Practice and Engagement (PE):** It's very important to practice with the basic material and stay involved in the course. To help you do this, you'll earn “PE credits” (not to be confused with gym class) by completing many different small activities through the semester. Most activities will earn 1 PE credit. In particular: **Every “check” on a Daily Prep or Followup Activity earns 1 PE credit.** There will also be weekly online practice homework set up using the **WeBWoRK** online homework system (<https://webwork-math.gvsu.edu/webwork2/>), with typically 16 problems available in each module worth one PE credit each, for a total of 192 PE credits available from WeBWoRK. There will be several other opportunities in the semester to earn PE credits.

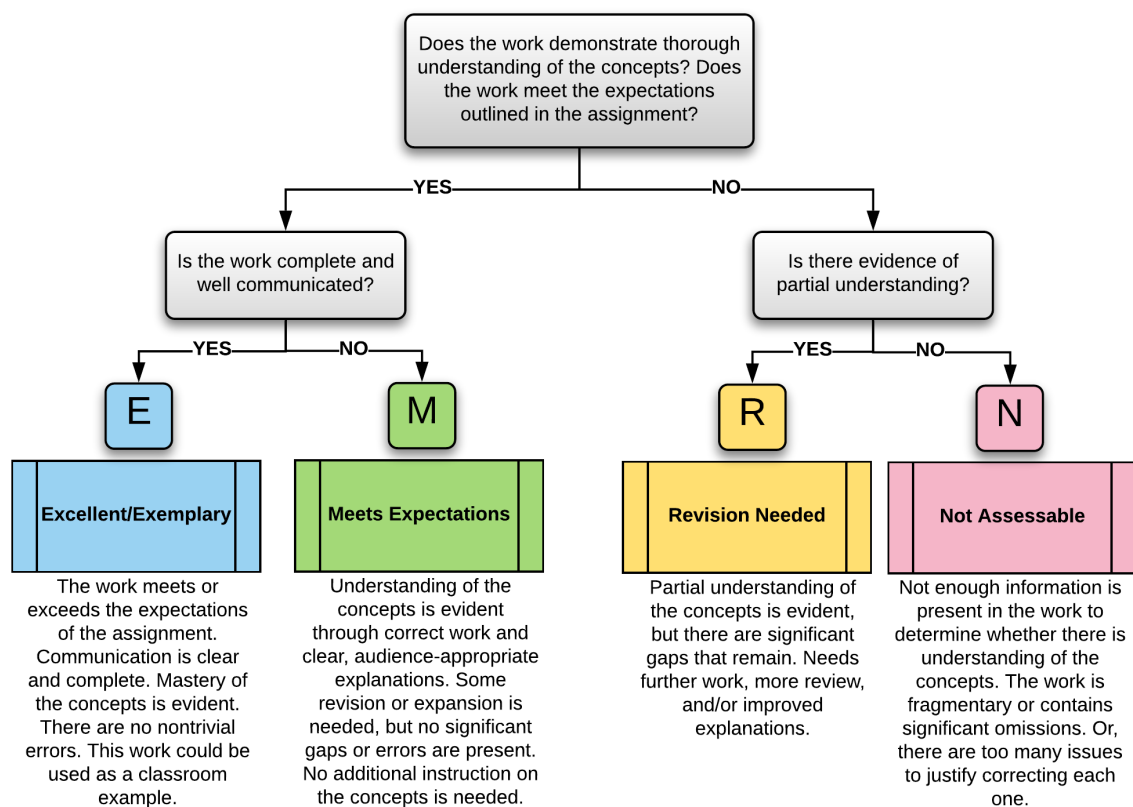
Additionally, we will have a **Final Exam** consisting of two parts. The first part focuses on big-picture questions on the overall ideas of the course. Your performance on this part contributes to the plus/minus grade in the course. The other part of the final exam will be one final Checkpoint to give you the chance to meet additional learning targets that have not yet been mastered. The Final Exam will be done asynchronously; it will be assigned on Monday December 14 and due on Wednesday December 16.

How your work is graded

Our course uses a **mastery-based grading system** in which **most graded work does not have a point value** but is instead graded on the basis of **whether or not it meets standards of acceptable work or not**. This is not exactly “Pass/Fail”, because if you submit work that does not meet the standards, you'll usually have a chance to revise it and resubmit for regrading, as often as needed until you're happy with your grade (or until the end of the course). But, like “Pass/Fail”, your work will be evaluated on a two-level or a four-level rubric. How this works, depends on the work being graded:

Daily Prep and Followup Activities: These are graded either with a “check” or an “x”. **A “check” is given if the work is turned in on time, and if every item has a response that represents a good-faith effort to be right.** Actual correctness is not factored in, so you should feel free to make honest mistakes and present your best understanding of the concepts, even if it's flawed, as long as you do a thorough job of it. An “x” will be given to work that is late, incomplete (there's at least one item that has no response), or shows insufficient effort (for example just putting down “I don't know” without trying).

AEPs: These are more involved, and are graded using one of four labels: **E** (Excellent/Exemplary), **M** (Meets Expectations), **R** (Revision Needed), or **N** (Not Enough Information/Not Assessable). Those labels are assigned using this flowchart:



EMRN rubric based on the EMRF rubric, due to Rodney Stutzman and Kimberly Race: <http://eric.ed.gov/?id=EJ717675>
EMRN rubric by Robert Talbert is licensed under CC BY-SA 4.0



Learning Targets and Checkpoints: There are 23 Learning Targets in the course, which together form an outline of all the important concepts in Calculus. Eleven (11) of these are designated as **Core** targets due to their central nature in Calculus, and the other 12 are designated as **Supplemental**.

An important goal for you in the course is to **demonstrate proficiency, and eventually mastery, of all the Core targets and as many of the Supplemental targets as you can**. Accordingly, there are two levels of achievement on the Learning Targets: **Proficiency** and **Mastery**. Each time you provide a piece of evidence that shows you know how to perform the task in a Learning Target, you will earn a “check” on that Learning Target. You can earn a check on a Learning Target in **four different ways**:

1. By **completing a problem on a Checkpoint** that pertains to that Learning Target. *(Most students will earn most of their checks this way.)*
2. By **scheduling an oral exam** (through Zoom/Google Meet) during which you’ll be given a problem similar to one on a Checkpoint for the Learning Target, and completing the problem satisfactorily along with followup questions I may ask.
3. By **creating a video** of yourself in which you work out the solution to a problem similar to one on a Checkpoint for the Learning Target (that I will provide), then submitting that video and answering followup questions via a video meeting.
4. By **using work on an AEP** that, in your view, shows evidence that you know how to perform the task on a Learning Target. In this option, you’ll schedule a video interview with me and make the case for

your work, and I'll listen and then ask some followup questions that you'll need to address.

As you earn checks on Learning Targets, you'll earn a **rating** on that target. There are three possible ratings:

- **No rating yet (NRY)**, which means you have not yet successfully provided evidence of mastery of the Learning Target. *(All students start the semester at this rating on all 23 Learning Targets.)*
- **Proficiency**, which means you have earned **one check**.
- **Mastery**, which means you have earned **two checks**.

Checkpoints will probably be the primary means by which you earn checks on Learning Targets and gradually improve your ratings.

- **Each Checkpoint is cumulative.** Checkpoint 1 will contain problems for 1-2 Learning Targets; Checkpoint 2 will contain *new versions of those problems* plus brand-new problems for the next 2-3 Learning Targets; Checkpoint 3 will contain new versions of all the previous problems plus brand-new problems for new Learning Targets; and so on.
- **On a Checkpoint, you only need to attempt problems you feel ready to take.** If you believe you need more time to study a Learning Target, you can skip the problem for that target on the Checkpoint and wait till the next round (usually 2 weeks later). You can skip an entire Checkpoint if you need to. But, there are only 10-11 of these planned for the semester, so make every effort to make *some* progress on each one.
- **On a Checkpoint, you only need to attempt problems if you still need or want to improve your rating on the Learning Target.** For example if you've earned a Mastery rating on Learning Target D.2, you do not have to attempt the problem for D.2 any more during the course.

As mentioned, **Checkpoints are not the only way to earn checks**. For example, you might earn Mastery on a Learning Target by doing two successful Checkpoint problems; or one Checkpoint problem and a video; or by using some AEP work followed by doing a Checkpoint problem successfully. You have options.

However, to keep the logistics from being overwhelming, there are just a few restrictions on those options:

1. *A Mastery rating must include at least one check earned through a Checkpoint problem or oral exam.* For example, you can't earn Mastery by doing two videos, or an AEP plus a video.
2. *No more than one check per week can be earned through oral exams, videos, and AEPs.* A "week" for us is defined to be the time period from 12:01am ET on Monday through 11:59pm ET the following Sunday.
3. *Video submissions will need to adhere by standards of video creation that will be posted to the course website.*

How your semester grade is determined

Your grade for the semester is not based on points because most items in the course don't carry point values. Instead, your grade will be based on **the quantity and quality of evidence you can provide of across-the-board mastery of Calculus** — the basic skills found in the Learning Targets, the applications found in AEPs, and your daily work and engagement elsewhere.

To determine your course **base grade** (the letter A/B/C/D/F without plus/minus modifications), use the following table. To earn a grade, you must complete **all** the requirements in the column for that grade; your base grade is the **highest grade level for which all the requirements have been met**.

Category:	D	C	B	A
Core Learning Targets (11)	5 Proficient	5 Proficient, 5 Mastered	10 Mastered	11 Mastered
Supplemental Learning Targets (12)	3 Proficient	6 Proficient	6 Proficient, 2 Mastered	6 Proficient, 4 Mastered
AEPs (8+)	2 M+	5 M+	2 E, 4 M+	4 E, 2 M+
DP + FA (48)	24	34	39	44
PE	100	170	190	210

Notes on the table:

- The requirements shown are the minimum to meet the grade level; exceeding those requirements also meets the level. For example, Mastering 10 Supplemental Learning Targets satisfies the Supplemental Learning Target requirement for an A.
- “M+” means a grade of M or E.
- “DP+FA” is the sum of the number of checks earned through either Daily Prep or Followup Activities. There are 24 possible for each.
- A grade of “F” is given if **not all of the requirements for a D are met**.

Important note on PE credits: There will be at least 240 PE credits available: 48 total through Daily Prep and Followup activities plus 192 through WeBWork. Other PE credit opportunities will be available but probably not more than 50 credits’ worth. Therefore, **it may be impossible to earn a C in the course (requirement of 170 PE credits) without doing at least 130-150 points of WeBWork**.

Plus/minus grades: Your base grade may be modified with a plus or minus, according to these guidelines:

- A **“plus”** is added to the base grade if all requirements for a base grade are satisfied, *and* the LT (both the Core and Supplemental) *or* AEP requirement for the next level up is also satisfied; *and* the big-picture portion of the final exam is passed.
- A **“minus”** is added to the base grade above if: (1) All requirements for a base grade are satisfied *except one*, and that one is no more than two levels below the others; **or** (2) You meet the minimum requirements for a base grade (i.e. none of the requirements for higher levels are met) and you do not pass the big-picture portion of the final exam. In the first case, if the deficient area is more than two levels below, the penalty will be either a minus or a full letter grade, at my discretion.

Revision and Tokens

The most significant and challenging work you do in the course — Checkpoints and AEPs — can be revised and resubmitted to allow you to improve on previous attempts and raise your grade. Your course grade is therefore based on what you *eventually* show that you can do, not just the results of a single moment. The process of revision/resubmission depends on the item:

Learning Target check attempts can be revised by reattempting the item on a later Checkpoint or through one of the other means described earlier. For example, if you attempt a Checkpoint problem on a target and don't do good-enough work, you can reattempt it on a later Checkpoint, or through an oral exam, or a video, or an AEP. Remember, though, only one check per week can be earned through non-Checkpoint methods, and Mastery level on a target requires at least one check earned by a Checkpoint or oral exam.

AEPs earning M, R, or N can be revised and resubmitted at any time. They will be regraded using the same standards as originally used. There are two important limitations on your revision and resubmission of AEP's:

Two-submission-per-week rule: No more than two submissions of AEP sets may be made per week. This can be two new sets, two revisions, or one of each. A third submission can be purchased with a token (below) but **four or more submissions in a week are not allowed under any circumstance.**

Revision of N grades rule: Students have to spend a token (below) in order to revise any AEP that was graded at "N" (Not Assessable).

Daily Prep and **Followup Activities** may *not* be revised; these are graded on the basis of completeness and effort only and are intended to be done once.

Tokens: Tokens are a fake currency that are used to "purchase" exceptions to course policies and other advantageous items in the course. Every student starts with five of these. One token can be spent for any of the following at any time:

- Attempt a second Learning Target in a given week through non-Checkpoint means
- Submit a third AEP (either revision or new submission) in a given week
- Revise an AEP graded "N"
- Extend the deadline on a Checkpoint by 12 hours (request must be submitted prior to the original deadline)
- Extend the deadline on a WeBWork set by 24 hours (request must be submitted prior to the original deadline)
- Purchase 3 PE credits

With the exception of the last item, tokens may not be "stacked", for example by spending 3 tokens to get a 72-hour WeBWork deadline extension. You can stack tokens to purchase PE credits (e.g. spend 3 to get 9 credits).

Opportunities to earn more tokens may be given during the semester.

Academic integrity in MTH 201

The university's academic integrity policy is described in the GVSU Student Code, Section 3.1 which you can read online here: <http://bit.ly/gvsuacademicintegrity>. **Every student has the responsibility of reading and understanding these policies, especially the consequences for engaging in academically dishonest activities.**

Some of the work you will do in the course involves collaboration; at other times collaboration may be allowed but not required; while at others it may not be allowed. Here are the rules for collaboration on each kind of work you do:

- *Daily Prep and Followup Activities*: You may collaborate with others, but your writeup must be in your own words. You may not copy someone's work and submit it as your own, nor may you copy the ideas from someone and simply change the wording.
- *Checkpoints* and other work done on Learning Targets: No interactions at all with another person or with unauthorized sources on the internet is allowed. Any evidence of using information from another person or source will be investigated as academic dishonesty.
- *AEPs*: Similarly, no interactions at all with another person or with unauthorized sources on the internet is allowed.

In particular, use of "study" sites such as Chegg or Coursehero, or Q&A sites like Stack Exchange or Quora, to obtain help on graded work other than Daily Prep or Followups is forbidden and will automatically constitute academic dishonesty.

All suspected instances of academic dishonesty will be thoroughly investigated, and whether a student has committed academic dishonesty is my determination to make based on the evidence. If I determine academic dishonesty has been committed, a report will be filed with the Dean of Students office, and the minimum penalty will be:

- *Daily Prep and Followup*: A grade of "x".
- *Checkpoints* and other Learning Target work: A grade of "x" and required expense of two tokens to reattempt; for severe cases, you may be barred from reattempting.
- *AEP's*: A grade of "N", and you will not be allowed to revise or resubmit the AEP for the rest of the semester.

Note these are *minimum* penalties; additional penalties may be given including reduction of course grades and potential suspension from the university.

Please note: There is no need to commit academic dishonesty in this class since you can revise and resubmit almost anything. If you come to believe that cheating or plagiarism is necessary given your situation: DON'T DO IT. Get some help instead and take comfort in the fact that you can just submit your best effort, get feedback, and try again later.

Additional course policies

Attendance: You are expected to attend the F2F meeting

Each F2F meeting will be live-streamed so that you can participate either F2F or remotely. It is critical that you actually attend your group's F2F meeting days — Monday/Wednesday for Red group and Tuesday/Thursday for Blue group — either F2F or synchronously online. **You may not attend the F2F meeting for the group other than your own** due to social distancing requirements; however you are welcome to watch the live stream of the other group's meeting if you want.

You will be responsible for all announcements made in the F2F meetings and for all material covered in those meetings. Each meeting will begin on the hour; please be on time for your meetings. If circumstances beyond your control prevent you from attending F2F or participating remotely, please let me know so I can help you stay current.

Tech support: Please note that **I (Prof. Talbert) am not able to provide support for technological issues.** If you encounter issues with technology, please use the appropriate source of help:

- *For help with Blackboard:* Email the Blackboard Help Desk at bbadmin@gvsu.edu or call (616) 331-8526. For hours of operation and more information see <https://www.gvsu.edu/elearn/help/>.
- *For help with the GVSU network, email, or printing:* Email the GVSU IT Help Desk at helpdesk@gvsu.edu; or call (616) 331-2101 or toll free (855) 435-7488. For hours of operation and more information see <https://www.gvsu.edu/it/>.
- *For specific help with your computer:* Try the GVSU IT Help Desk (see previous bullet) or contact your equipment manufacturer or computer store.
- *For help with course tools such as Desmos and Campuswire:* Ask a question on the **#tech** channel on Campuswire, seek out the help documentation in the tool, or do a targeted Google search.

Deadlines and late work: Deadlines for course work are clearly indicated on the Course Calendar; in cases of apparent conflict between dates, always assume that the Course Calendar is right.

- *For Daily Prep and Followup Activities:* No extensions to deadlines are available. Simply submit a good faith effort on all items by the deadline.
- *For Checkpoints and WeBWork sets:* Deadlines may be extended 12 and 24 hours, respectively, by spending a token. No other extensions are available.
- *For AEPs:* There is only one deadline for AEP's, namely the last day of classes (11:59pm ET, Friday December 11). Otherwise you simply submit your work when it is ready to be graded (subject to the Two-Item-Per-Week Rule). This deadline will not be extended.

Math Center: GVSU's Math Tutoring Center is online with Blackboard Collaborate this semester! You can access virtual drop-in tutoring through a link in your Blackboard course called Math Tutoring Center or on our website at <http://gvsu.edu/tutoring/math/>. Then you need to click on the "Online Math Tutoring Center" button, which will require a GVSU login. There will be tutors online, ready to help, Monday through Thursday 10a – 9p, Friday 10a – 2p and Sunday 6p – 9p starting Wednesday, September 2nd. Bring questions about your technology, on methods and concepts, or on specific problems. All Math Center tutoring is FREE, so stop by early and often. When you enter the Collaborate room, please type your first and last name so you can get you signed in and connected with a tutor.

Special learning needs: If you have special needs because of learning, physical or other disabilities, it is your responsibility to contact Disability Support Resources (DSR) at 616-331-2490 or

<http://www.gvsu.edu/dsr/> . DSR will help you arrange accommodations. Then, speak with me in person about making those accommodations and ensure that they are consistent with your arrangements with DSR.

Basic needs security: If you have difficulty affording groceries or accessing sufficient food to eat every day, or if you lack a safe and stable place to live, I encourage you to visit [Replenish](#), a food resource for GVSU students. If you are comfortable doing so, please speak with me about your circumstances so that I can advocate for you and to connect you with other campus resources.

Gender identity and expression: If, for purposes of gender identity and expression, your official name (in Banner) does not match your preferred name, your name can be updated in Blackboard. Please contact the registrar's office to submit this request. The registrar's office will contact the Blackboard administrator to make the change and will also contact your professors to inform them that your name in Banner will not match the name in Blackboard.

Changes to this syllabus: Changes to this syllabus may occur during the semester. In those cases, the changes will be announced in class and online, and if appropriate, students will be given a voice on how the changes will be implemented. It is your responsibility stay abreast of the information passed along in course announcements so that you will be aware of any changes that take place.

Credits: Portions of the language of this syllabus were adapted from the syllabi of Prof. Matt Boelkins and Prof. David Clark, both of GVSU.

MTH 201 COVID-19 Policies

As you are well aware, we will be having class this semester while trying to navigate a global pandemic that seems to change every day. While we can't predict even the near future, the following are general guidelines and plans for how we can work productively together in the course.

Taking care of yourself

Above all else, **take care of your own physical and mental health** during these difficult times. Make sure you are getting sufficient rest, staying connected to friends and family, and giving yourself time and space to do things you enjoy outside of college. [This website lists several good tips](#) for maintaining good self-care in our situation.

Before coming to campus, [perform a self-evaluation each time](#) and if you feel even the slightest bit of sickness or Covid-19 symptoms, stay home and participate remotely. You should be on campus only if you feel *completely healthy*. Remember that **you can opt out of your group's F2F meeting at any time and participate online synchronously — no questions asked, no permission needed, no penalty incurred**. Also note that *there are no graded assessments done in class* so you will never have to make up work that was turned in during class.

Keeping our class meetings safe

When you are present in a F2F meeting, please observe the following:

Wear a mask at all times. Face coverings, such as masks, are required to be worn in the classroom. Students who have forgotten their face coverings may get a disposable mask at a campus office. The evidence is clear that [face coverings are a crucial part of keeping coronavirus at bay](#) and [support the university's commitment to providing all members of its community with an inclusive living and learning environment with equitable opportunities for success](#). GVSU's policy on face coverings is posted on the [Lakers Together web site](#). Students who are not able to wear a face covering due to a medical condition should [contact Disability Support Services \(DSR\)](#) to discuss their individual situation.

Please note, students who remove their masks during class, wear the mask incorrectly (for example, with the nose exposed), or refuse to wear a mask will be reminded of this policy once, and then asked to leave if non-compliance continues.

Observe proper social distancing. Your classroom has been specially arranged so that students are 6 feet apart from each other and from the professor at all times. This is sufficient for social distancing and close enough so that 2-3 students can turn to each other and discuss a concept. We will also leverage technology to allow for remote communication, for example using the chat rooms in Campuswire. **Please do not encroach on the space of another person, or share physical objects such as pens, calculators, or paper.**

Practice appropriate personal hygiene. Wash your hands regularly or use hand sanitizer. If you must cough or sneeze, do so facing away from other people and use the inside of your elbow to cover your mouth, even if you have a mask on. You may wish to bring sanitizing wipes to wipe down your desk and seat before and after class.

If plans change

We will begin the semester in “staggered hybrid” mode, but several things could happen during the semester that might alter this setup. The details for how we respond to events of the next 14 weeks depend on the situation, but please rest assured that I (Talbert) have plans in reserve for all likely scenarios including if the university goes fully online or if I cannot be present due to self-quarantine or infection. **Remember to check your email, Blackboard announcements, and Campuswire daily to stay notified of all course information.**

Encouragement: Although these plans can be scary and demoralizing, I want you to know that **GVSU is doing everything in its power to keep people safe from Covid-19**. If we observe reasonable precautions like the ones described above, **there is no reason to be afraid**. If we stay focused, remain flexible, and give our best work then we will learn just as well as in “normal” times, which I am hopeful will return soon.

Appendix: Course modules and Learning Targets

Learning Targets

- **Group F: Use functions and other pre-Calculus mathematics proficiently.**

- F.1 **(CORE)**: I can evaluate functions given in different representations, find composites of functions, and determine the domain and range of a function. (*Assessed via the Functions Bootcamp assignment*)
- F.2: I can find the average rate of change of a function on an interval.
- **Group L: Calculate, use, and explain the concept of limits.**
 - L.1: **(CORE)** I can find the limit of a function at a point using numerical, graphical, and algebraic methods.
 - L.2: I can identify limits in indeterminate form and apply L'Hopital's Rule to evaluate them. (*Assessed via an AEP*)
- **Group D: Explain and interpret the meaning of the derivative of a function.**
 - D.1 **(CORE)**: I can find the derivative of a function, both at a point and as a function, using the definition of the derivative.
 - D.2 **(CORE)**: I can use derivative notation correctly, state the units of a derivative, estimate the value of a derivative using difference quotients, and correctly interpret the meaning of a derivative in context.
 - D.3 **(CORE)**: Given information about f , f' , or f'' , I can correctly give information about f , f' , or f'' and the increasing/decreasing behavior and concavity of f (and vice versa).
 - D.4: I can find the equation of the tangent line to a function at a point and use the tangent line to estimate values of the function.
- **Group DC: Use shortcuts to calculate derivatives efficiently.**
 - DC.1 **(CORE)**: I can compute derivatives correctly for power, polynomial, and exponential functions and the sine and cosine functions, and basic combinations of these (constant multiples, sums, differences).
 - DC.2 **(CORE)**: I can compute derivatives correctly for products, quotients, and composites of functions.
 - DC.3: I can compute derivatives correctly using multiple rules in combination.
 - DC.4: I can compute the derivatives correctly for logarithmic, trigonometric, and inverse trigonometric functions.
- **Group DA: Use derivatives to solve authentic real-life application problems.**
 - DA.1 **(CORE)**: I can find the critical values of a function, determine where the function is increasing and decreasing, and apply the First and Second Derivative Tests to classify the critical points as local extrema.
 - DA.2: I can determine the intervals of concavity of a function and find all of its points of inflection.
 - DA.3: I can use the Extreme Value Theorem to find the absolute maximum and minimum values of a continuous function on a closed interval.
 - DA.4 **(CORE)**: I can set up and use derivatives to solve applied optimization problems.
 - DA.5: I can compute the derivative of an implicitly-defined function and find the slope of the tangent line to an implicit curve.
 - DA.6: I can set up and use derivatives to solve related rates problems.
- **Group INT: Use definite integrals and the Fundamental Theorem of Calculus to find areas and total change.**
 - INT.1: I can calculate the area between curves, net change, and displacement using geometric formulas and Riemann sums.
 - INT.2: I can explain the meaning of each part of the definition of the definite integral in terms of

- a graph, and interpret the definite integral in terms of areas, net change, and displacement.
- INT.3: I can evaluate a definite integral using geometric formulas and the Properties of the Definite Integral.
 - INT.4 **(CORE)**: I can evaluate a definite integral using the Fundamental Theorem of Calculus.
 - INT.5 **(CORE)**: I can correctly antidifferentiate basic functions and identify antiderivatives.

Modules, Textbook coverage, and Learning Target focus

Please see the Course Calendar for the dates corresponding to these modules.

Course Modules

Module	Focus	Sections from text	Learning Targets
1	How do we find the speed of a moving object?	1.1, 1.2	F.2, L.1
2	What is the derivative of a function?	1.3, 1.4	D.1, D.2
3	What does a derivative tell us about a function?	1.5, 1.6, 1.7	D.3, D.4
4	How do we efficiently compute derivatives of basic functions?	2.1, 2.2	DC.1
5	How do we compute derivatives of products and quotients?	2.3, 2.4	DC.2
6	How do we compute derivatives of composites and other functions?	2.5, 2.6	DC.2, DC.3, DC.4
7	How are derivatives used to learn how things behave?	3.1, 3.3	DA.1, DA.2, DA.3
8	How are derivatives used to find the best way to do something?	3.4	DA.4
9	How are derivatives used to find how fast something is changing?	2.7, 3.5	DA.5, DA.6
10	How do we find how far a moving object has traveled?	4.1, 4.2	INT.1
11	What is the definite integral of a function?	4.3, 4.4	INT.2, INT.3
12	How are derivatives and integrals related?	4.4	INT.4, INT.5

