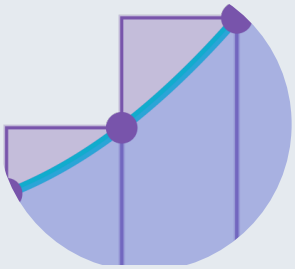


Approximating an area

Calculus II

MATH B102

Course info

- Tuesday & Thursday
- 9:55–11:15a
- Park Science 338

Instructor

- Professor John Bergdall
- Park Science 334
- jbergdall@brynmawr.edu
- x5356

- Office Hrs:
  Mo 12:00–1:00p
  Wed 9:00-10:00a
  Thu 11:30a-12:30p
  Fri 4:00–5:00p*
  (*most weeks)

TA info

- Blossom Jeong
- bjeong@brynmawr.edu

TA sessions

- Session 1 (90 minutes)
- Thursday 9:00-10:30p
- Park Science 336
- Session 2 (90 minutes)
- Sunday 7:00-8:30p
- Park Science 336

Essential questions

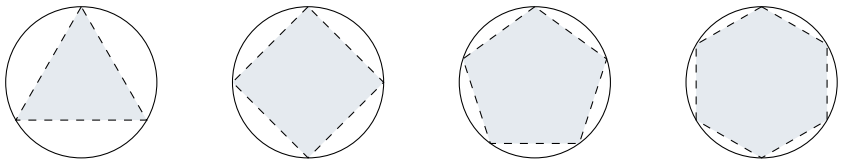
The three essential questions MATH B102 aims to explore are:

- What are the most basic building blocks of mathematical calculation?
- What does it mean to calculate with infinities?
- How can mathematical clarity be used to understand complex phenomena?

Longer overview

This is a 2nd semester course in calculus. The fundamental objects are integrals and power series.

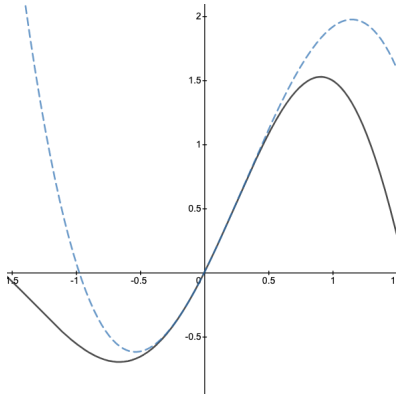
An integral is a method for calculating an area; the mechanism is "infinite exhaustion." For instance, to calculate the area of a circle, Archimedes considered a triangle inscribed in a circle, then a square, then a pentagon, and so on:



The area of the circle is eventually exhausted by the area of many-sided figures with easier to calculate areas. The area of a general smooth region, like the region bounded by the graph of a function, can also be broken down in the same way ("Riemann sums"). The difference is that the general approximating step is more difficult than the circle case. *The Fundamental Theorem of Calculus* alleviates this tension, allowing explicit calculations via "anti-derivatives."

Remarkably, the technique we use to calculate the area of two-dimensional regions has applications everywhere! For instance, integrals can be used to calculate *three*-dimensional volumes and areas of *infinite* regions, calculate the *work* required to pump water from a tank, model the *decay* of radioactive substances, and model *long-term behavior* of oil production. The calculation of integrals and their applications form the first half of our course.

The second pressing matter for us is "power series" (sometimes called "Taylor series"). Here the philosophy of infinite exhaustion is applied to approximating the functions themselves, rather than the areas their graphs bound. Instead of studying geometric areas and using the simplest shapes (rectangles) we study general *functions* and use the *simplest* ones: the powers of x like 1, x, x^2, x^3, and so on. The simplicity here is not geometric, since these functions have curvy graphs! Rather, we use these building blocks for functions because they are simple from the perspective of *algebra*, that remarkable topic dating to Babylonia, codified in the writings of 9th century Persia, and brought to bear in physical problems with the adoption of coordinates systems *aprés* Descartes. The curvi-ness of the graphs of powers of x are here for our benefit. As an example, the picture



shows $y = \sin(2x)e^{x/2}$ in black and the polynomial $2x + x^2 - \frac{13}{12}x^3$ dashed and in blue. Look how close they are when x is between -0.5 and 0.5!

In summary, Calculus 2 is all about taking complex things and approximating them by much simpler, though maybe infinitely many, pieces. You're going to learn how to do that, and so much more. Welcome!

FAQs

How do we address you?

I use he/him/his pronouns. If you need to name me, use Professor Bergdall or John (not Dr.). If you write me an email, include an appropriate greeting (Dear/Hello...) and closing (Sincerely/Thank you...).

What if I forgot xxx?

We will spend the first 3 lectures reviewing. The most important things to review are the methods used to calculate derivatives and anti-derivatives of simple functions. If you have learned this but are finding it challenging to remember, please *selfishly* seek resources.

Calculators?

On exams, no. On the homework, sometimes it will be comforting to have a calculator handy to do arithmetic. The homework is online, though, so you should be able to make use of a calculator on the computer.

Formula sheets?

For everything? No. On exams I will give you some formulas I feel are appropriate, especially if not knowing the formulas would render the problems impossible. (Because then what are we really testing?) You will know these sheets ahead of time.

Material

Texts

Hughes-Hallet, et. al., *Calculus: single and multivariable*. 6th edition. Available from Bryn Mawr College Bookstore. (The solution manual is available from the reserve shelf in Collier Library.)

Online

We will use moodle.brynmawr.edu for posting of assignments and class discussion. You will also need to sign-up for an account at edfinity.com in order to complete your homework. Details are on the pages that follows.

Learning goals

In MATH B102, you will learn to

- Apply ideas of approximation conceptually and in calculations.
- Communicate clearly, in writing, mathematical ideas or procedures.
- Use computer resources to symbolically and graphically understand concepts.
- Efficiently explain and apply concepts at the heart of calculus.
- Study large, complex, problems, by assembling solutions to smaller problems.

Grade breakdown

10%	Daily course contribution
15%	Class preparation and exercises
10%	Writing assignments
20%	Mastery assessments
15%	Final portfolio
30%	Final exam

The default grade lines will be *at least as generous* as: >93% earns a 4.0, >90% earns a 3.7, >87% earns a 3.3, >83% earns at 3.0, and so on.

Accessibility

Bryn Mawr College is committed to providing equal access to students with a documented disability. Students needing academic accommodations for a disability must first register with Access Services. Students can call 610-526-7516 to make an appointment with the Access Services Director, Deb Alder, or email her the address dalder@brynmawr.edu to begin this confidential process. Once registered, students should schedule an appointment with the professor as early in the semester as possible to share the verification form and make appropriate arrangements. Please note that accommodations are not retroactive and require advance notice to implement. More information can be obtained at the Access Services website whose URL is http://www.brynmawr.edu/access-services/

Any student who has a disability-related need to tape record this class first must speak with the Access Services Director and to me, the instructor. Class members need to be aware that this class may be recorded.

Academic Integrity

The Bryn Mawr College Honor Code is in effect for all students enrolled in this course. You may work with other students on homework and lecture preparation. You may seek as much help as you want from Prof. Bergdall, Ms. Jeong, the Q-center, or any of your peers. You should not collaborate on exams. It is never okay to copy work from another student or resource without carefully working through the material yourself. Submitting such work is a violation of the honor code.

Graded components

Daily course contribution (10%)

You can earn these marks *regardless* of vocal participation by engaging the material and actively participate in group work. If we feel you are not, we will initiate a discussion to clarify. Working in groups reinforces the practice and concepts of calculus, but our success depends on you being present. *You are expected to be at lecture, on time, on a daily basis.* Regularly missing class or arriving late, even by 5 minutes, is disruptive. We will take this into account as follows:

- You will begin the semester with 13 points.
- We will deduct 1 point for missing a lecture and a 1/2 point for being late ("after announcements").
- If we are late by the clock, everyone will earn a 3/4 point. (You can have more than 13 points.)

At the end of the semester, your score will be calculated out of 10 points. The 3 "free" points account for typical absences.

Students in the Tri-Co have met our expectations when they are clear. This policy clarifies our expectations; it is not meant to punish. You may encounter a situation, or situations, during the semester that stop you from regularly attending lecture on time. If that is the case, it is your responsibility to interface with us as soon as possible so that we have the chance to adapt our expectations to your changing situation. You are welcome to utilize your dean to communicate with us, if appropriate.

Class preparation and exercises (15%)

You are expected to be both well-prepared before each class and to work on exercises after each class.

Each lecture will have a reading assignment and reading guide for you to follow. Bring your completed guide to lecture to turn in. It will be graded for completeness (all or nothing). If you want it after lecture, copies are free on campus.

After each lecture you will have the opportunity to master material with practice exercises. Homework will be entered through edfinity.com. Details are given below. You will have multiple attempts to find the right answers. You should *keep a notebook* of your scratch work so you can (a) study from it and (b) use it if you have questions for your professor or TA. To most efficiently get help, you should bring this notebook along to office hours or problem sessions.

Mastery assessments (20%)

There is an ebb and flow to this class, between technique and applications. In order to reliably carry out applications, you must develop proficiency in technique. After the first and third units of the course you will have a 60 minute, self-scheduled, assessment. You will be asked to produce solutions to problems like those on your homework, discussed in lecture, and on the reading guides. Further problems may be included to test your conceptual understanding.

Writing assignments (10%)

Imagine you did brilliant work on an environmental study, but your peers could not understand your approach and thus, tragically, could not trust your conclusion. That'd be sad! Throughout your lives, you will be asked to have ideas or solve problems and then *explain yourself*. Our course is no different. You will have four opportunities to solve a problem and carefully explain yourself. Typically, the problem will not be covered in class. You may even have to read a portion of the text for help. A sample will be provided on moodle. The first one is for *effort only*, so that you can align yourself to the experience.

Final portfolio (15%)

In the final week(s) of class, you will have the opportunity to revisit your work and compile a portfolio. This will include revising your writing assignments, skill assessments, and writing a brief reflection. Details will be made available later.

Final exam (30%)

The final exam will be three hours, self-scheduled and take place during the finals period. It will be cumulative: every topic we cover during the semester, not just those on the mastery assessments, will be fair game.

Late Work and Make-up Policy

- Writing assignments, mastery assessments, and exams have deadlines announced in *this* syllabus. Plan accordingly. We will allow extensions or make-ups in the presence of debilitating obstructions (overwhelming concerns of wellness, emergency travel, etc.). Regardless, we *always* invite you to interface with us. Include your dean if it is appropriate.
- You have 6 opportunities to turn in homework or reading guides late (combined). Simply turn reading guides in late. For an exercise set, email us or tell us in person that you need more time. In your message, indicate *an appropriate due date* (we may slightly adjust your suggestion). Note: you receive partial points on exercises, so you may want to save turning an assignment in late for a situation where you have not done very many problems.

Online homework (Edfinity/WeBWorK)

This course will use an online platform to enter and score homework. The underlying software is known as WeBWorK. It was developed by the Mathematical Association of the Americas (MAA). Edfinity is a commercial service, partially funded by the National Science Foundation (NSF), that hosts WeBWorK for us, along with providing us a simple, intuitive, user interface and easy-to-grasp analytics on class performance. This semester, *your access will be free*.

In order to get started you need to join our course. You can do that by going to the URL

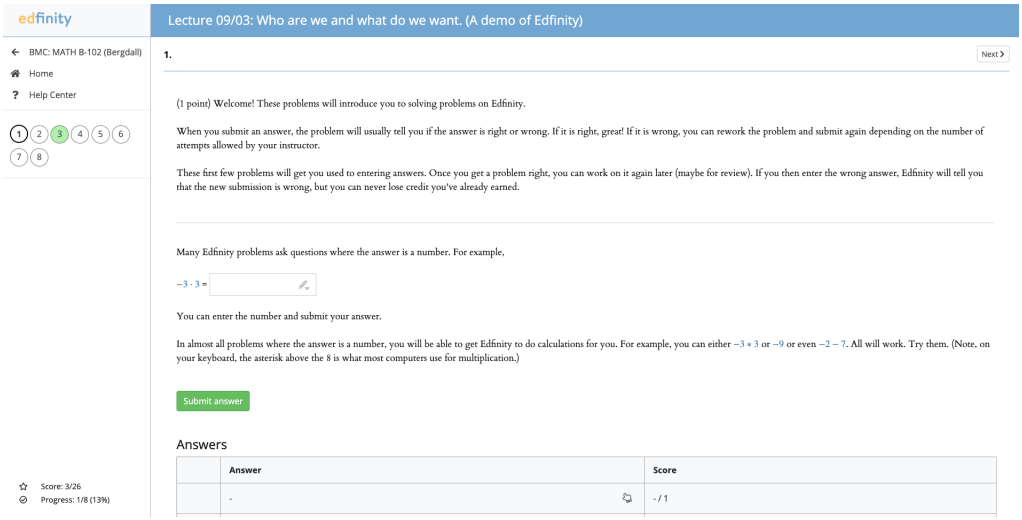
https://edfinity.com/join/B7BD97FM,

which will have you join our specific course. You should do this *as soon as possible*: you have a demo assignment due by Thursday morning before lecture! It should offer you an opportunity to sign up and then select a pre-paid student license for the course. You should sign up *by email* using your *BiCo email*. Use your *complete last name*, as it is shown in BiONiC.

You will not see a ton of information at the start. You should see the course listing:

and after you click on that you will be able to navigate to a list of assignments

The very first assignment is a demo of the software. If you click on that assignment you should see something like



I won't write more about how to navigate the website here. There are a few notes to add, though.

- Your assignment will be automatically submitted at the due date. It will score any points you have earned.
- Since this is our first semester, it is possible that there are small technical glitches. Especially, I am paranoid you may submit an answer correctly but the system's programming fails to recognize it. (This shouldn't happen. These problems have been used year after year at other institutions.) If that happens, remain calm. We are humans. We can control the computers. The steps you should take (roughly in order) are:
  - *Double* check your work and, if possible, find a friend to discuss with in person.
  - *Triple* check what you've typed. There is a big difference in how the computer will interpret $\sin 2t$ versus $\sin(2t)$.
  - If appropriate, post to the *Homework discussion* forum on moodle. The ground rules are discussed next.
  - Try *not* to use the *Email instructor* button at the bottom of the problem page.

    This is less useful than the homework discussion forum because you will not be able to show me your work and your peers cannot benefit. I will receive emails from the homework discussion forum also! Please email me directly about an Edfinity problem only if you feel it would be inappropriate to post to the forum.
- Use the *Report a technical issue* link above for issues like: your login breaks, the submit button breaks, etc.

Resources for help in this course specifically

Before going into details on the next two pages, we make an important observation:

> Everyone may need help. The amount of help you need will depend wildly on what you are trying to do, your background, and your environment. The amount of help you receive is determined by the amount of help you seek.

The assigned textbook readings, the homework assignments, and the general course content are all things you are tasked with understanding. Below we list myriad resources for help with any or all of the above. Getting help, from any resource, will not result in a "mark against you." We wish you the best time finding an efficient way to get help!

Office hours

My office hours are listed on the left-hand column of the first page. Since many students in this class are on campus for the first time, even the first of their families to go to college, let me explain further how office hours work. Office hours means your professor plans to be in their office, with the door open, and ready to answer questions. Those questions could be on *any* topic you want. Office hours are also an excellent place to meet other students in the class, many of whom share the same questions you have and some of whom will have questions you did not even realize you had! Some students make a habit of coming to office hours to work on homework, even if they do not have any pressing concerns. That way, they meet other students while at the same time having someone pretty good at calculus nearby.

Problem sessions

We are lucky to have Blossom Jeong ('20) as a teaching assistant for our course. Blossom will hold two 90 minute problem sessions where you can go get help and ask questions. You can also meet new friends there!

Homework discussion forum

On our moodle page, you will find a forum for discussing homework problems. Here are the ground rules for using this forum:

- You are allowed to post either anonymously or using your name.
- You are allowed to ask any question that is more specific than "How do you do this problem?", provided you ask thoughtfully. Here are two possible posts, one is what we want and one is what we do not want.

  Post 1:

  How do you do Problem 3? Calculate $f'(t)$ for $f(t) = t^{-2}$. Thx lol.

  Post 2:

  Hey y'all,
  Problem 3 on my Edfinity homework for Lecture 09/05 asks me to calculate $f'(t)$ where $f(t) = t^{-2}$. I tried using the power rule, where I lower the exponent by 1, and I keep getting $-2t^{-1}$, which is wrong or Edfinity is wrong. Can you help? Thanks!
  Best,
  Questioner asking the right way.
- When you ask about a problem, you must include what you have tried up to that point. It does not need to be long. If appropriate, you can try to attach a picture or typed version of your work. Before you do that, you should consider carefully how easy it will be to read. You may need to re-write it, which might help you find your mistake anyways!
- It is possible you are right and that Edfinity is wrong. After all, the computer is programmed by a human and humans make mistakes. If this has happened, you are encouraged to post a question in the forum, but you should carefully explain your suspicion as to why you think you are right but Edfinity is not. That should include *an explanation for how you checked your work against another source*.

Email

Your questions are important, so if you cannot find the time to ask me something before class, during class, after class, or in office hours, then you should email me. Your questions may concern anything at all, but I especially invite you to ask any questions related to the course atmosphere that you are not comfortable asking about in person. I try very hard to answer my messages, but there is a caveat with email: once the semester gets moving it could be up to 24 hours before I get around to responding (and longer on the weekends). If you sent me a message and I haven't responded, please send it again or remind me in person. Perhaps I had to follow-up somewhere else on campus and I am waiting for more information.

Appointments

I am more than happy to arrange for an appointment with me if you feel that it is more suitable than the above options. You can email me, but I must ask for patience in finding a time to meet. In your initial email you should explain (a) what you want to talk about and (b) what times *you* are available. I will then do my best to find a time that works for both of us. The more times you can offer, the more likely we can arrange to meet quickly.

Resources for help, generally

Study groups

I would literally not have made it through crucial mathematics courses (and I have a math Ph.D.!) without a study group as an undergraduate. Study groups serve at least two crucial purposes. First, they provide you with other *people* who can share your experience of learning the material. Second, they provide you with scaffolding by requiring you to schedule time to work on the material. You should consider asking around to form a study group in the first weeks of the semester. Coming to office hours and problem sessions are excellent ways to meet other students that may be interested in studying with you.

The Q center

The Q center is a campus resource where you can find mentors who will discuss problem-solving for any of the courses in quantitative disciplines. The center is located on the rear side of the Campus Center, in the Canwyll House. Their website https://www.brynmawr.edu/qproject provides further explanation and a mentoring schedule. You are more than encouraged to use this remarkable resource for help in our course.

Other resources

The internet is an amazing place. The design principles that led to devices like your phones, which "just work," have more recently been applied in novel ways to websites to help you learn mathematics. I will highlight just two here:

- https://www.desmos.com will allow you to make beautiful graphs. We will demo this often in class, rather than draw things by hand on the chalkboard. Links will be provided to our demos on moodle.
- https://www.symbolab.com/ is an easy-to-use calculator for mathematics, including portions of calculus. You should consult this when you need help, but only *as a resource to learn*. If you find yourself directly copying the work from Symbolab, without any attempt to understand, then you are violating the honor code. I must also warn you: a human programmed the methods Symbolab uses and for expediency they may use techniques beyond our course. Do not be surprised if the answers are foreign-looking.

There are also an extraordinarily large amount of video resources on YouTube, the Khan Academy, and elsewhere that you can use as a complement to reading the textbook and working on examples in lecture. Do not feel guilt for consulting videos. Sometimes it takes a minute to figure out the math. Videos have the awesome advantage that you can pause and rewind them.

You may also run into students that will show you how to use computer software like Mathematica to make calculations. These are also wonderful tools and if you are interested then we encourage you to pursue them! (We do not require Mathematica.)

Notes on studying mathematics (now and later)

College-level mathematics is highly-tuned toward students studying and mastering material on their own time. For some of you, this will be a novel experience. Our hope is that the reading guides provide a model you can use later in your careers, when you may not have guides provided for you. Here is a rough plan for approaching new material, like our readings:

- Quickly browse or skim the material. Try to estimate how long it will take you to read and whether or not the material can be broken down into smaller sections that can be individually read.
- Carefully read highlighted/bolded/emphasized text and answer the reading guide questions. These are meant to serve as road signs for your mathematical journey.
- Work through the examples in the text! You do *not* need to do every example, unless you have the time. Rather, you should focus on the first few examples of each section, as those are the most basic, most useful, and easiest to understand.
- Review and prepare for the exercises. After lecture, you should have spent quality time with the textbook readings and examples. If, at that point, you feel uncomfortable with what we have studied then you should re-visit the textbook, re-work examples, and make a plan for meeting either the professor, the teaching assistant, or a study group. As you begin to process more, and you become more comfortable, begin working on the exercises and thinking about how you'll review for the material later. Creating flash cards is a helpful way to synthesize what you have learned.

Now, after giving you some of those tips we do find it necessary to affirm something:

> Reading mathematics will take *longer* than other reading.

It is normal to re-read the same paragraph quite a few times before feeling like you maybe might just a little understand it. Do not expect to read the text straight through and "get it." You are welcome to come to office hours and discuss your reading, and how to do it efficiently. You will get a most sympathetic ear.

Summary of assignment due dates

Homework exercises and reading guides are due regularly:

- Tuesday lecture homework is due Friday night (Saturday at 3:00a, technically).
- Thursday lecture homework is due Sunday night (Monday at 3:00a, technically).
- Reading guides are due on the day of their lecture.

Major assignments are summarized below, and included in the details schedule that follows.

Major assignment dates

Assignment	Date available	Date due
Writing assignment 1	09/05	09/19 (5p)
Writing assignment 2	10/03	10/29 (5p)
Writing assignment 3	10/29	11/19 (5p)
Writing assignment 4	11/19	12/05 (5p)
Mastery assessment 1	10/03 (11:15a)	10/04 (12:30p)
Mastery assessment 2	11/14 (11:15a)	11/15 (12:30p)
Final portfolio	—	12/12 (5p)
Final exam (self-scheduled)	12/15 (7:00a?)	12/20 (12:30p)

Detailed class schedule

UNIT 1: Fundamentals of integration and techniques of integration (6 lectures)

Date	Leading Q.	Topics	Assignments
09/03	Who are we and what do we want?	Syllabus & introductions	Read: Syllabus, 5.2-3
		Remembering the definite integral	
09/05	How do you differentiate and integrate, again?	Derivatives & anti-derivatives	Read: 3.1-5, 5.x, 6.2
			Writing ass. 1 out.
09/10	Can we recall inverse functions?	Implicit differentiation	Read: 1.5, 3.2, 3.6-7
		Inverse trigonometric functions	
09/12	How can we integrate nested functions?	Substitution method	Read 7.1
09/17	Can we integrate products of functions?	Integration by parts	Read 7.2
09/19	What “general” functions can we integrate?	Trigonometric substitution	Read 7.4
		Partial fraction method	Writing ass. 1 due. (5p)

UNIT 2: Two types of applications of integrals (6 lectures)

Date	Leading Q.	Topics	Assignments
09/24	How are 2-d areas related to 3-d volumes?	Areas/volumes via integrals	Read 8.1
09/26	What about some “funky” shapes?	Volumes of revolution	Read 8.2
		Arc lengths	
10/01	How do we chop up physics in calculus?	Work calculations	Read 8.5
10/03	Where did the rates of change go?	Intro. to differential equations	11.1, 11.4
			Writing ass. 2 out.
Mastery assessment I: 11:15a on 10/03 → 12:30p on 10/04.			
10/08	How *fast* do things change?	Exponential growth and decay	Read 11.5
10/10	Have we hit peak Beyoncé?	The logistic model	Read 11.7

UNIT 2.5: Fall Break (0 lectures)

UNIT 3: Calculus and infinity (6 lectures)

Date	Leading Q.	Topics	Assignments
10/22	How do we organize hierarchies of functions?	l’Hôpital’s rule	Read 4.7
10/24	Can infinite regions have finite area?	Improper integrals	Read 7.6
10/29	Can we say more about hierarchies of functions?	Comparison of integrals	Read 7.7
			Writing ass. 2 due. (5p)
			Writing ass. 3 out.
10/31	Can we go back to limits for a sec?	Sequences	Read 9.1
11/05	Can taking drugs forever make you sick?	Geometric series	Read 9.2
11/07	Will Achilles catch the tortoise?	Convergence of series	Read 9.3

UNIT 4: Power and Taylor series (6 lectures)

Date	Leading Q.	Topics	Assignments
11/12	How do we *test* if Achilles catches the tortoise?	Convergence tests	Read 9.4
11/14	Can we make our series into functions?	Power series	Read 9.5
		Intervals of convergence	
Mastery assessment II: 11:15a on 11/14 → 12:30p on 11/15.			
11/19	How are polynomials basic building blocks?	Taylor polynomials	Read 10.1
			Writing ass. 3 due. (5p)
			Writing ass. 4 out.
11/21	How can we use infinite polynomials?	Taylor series	Read 10.2
11/26	Do infinite polynomials help ease calculation?	Calculating Taylor series	Read 10.3
11/28	Can you use another break?	Thanksgiving holiday	Rest
12/03	How do we profit?	Errors in approximations	Read 10.4

Finishing topic: To be determined (3 lectures)

Date	Leading Q.	Topics	Assignments
12/05	TBD	TBD	TBA
			Writing ass. 4 due. (5p)
12/10	TBD	TBD	TBA
12/12	TBD	TBD	TBA
			Final portfolio due. (5p)
Final exams: 12/15 → 12/20.			

Classroom norms

This page was intentionally blank, but now contains anonymous norms that members of our class hope are observed while working in groups. They are in no particular order.

- When meeting new people, introductions should include pronouns.
- Be respectful.
- Don't rush through material in groups — take time to make sure everyone in the group understands.
- Don't overtake a conversation, give others the chance to speak.
- Make sure everyone understands a problem before moving on.
- Being kind, respectful, and not judgmental if someone is confused or does something wrong.
- Share your work (collaborate) in groups. Don't push ahead on your own.
- Try not to say an assignment problem is easy, because someone else could be struggling with it.
- I would like us to be helpful and respectful towards one another.
- Always make sure everyone is all together before moving on.
- Respect everyone's ideas/thoughts; make sure everyone is on the same page and caught up.
- Students asking any questions without fear of judgment from peers.
- [We should be] inclusive and accommodate those with learning differences.
- One norm I would like is for the group to be respectful of everyone and what they are saying. Also, if a member is still confused on a concept, that the group does not just keep pushing ahead, but gives the member any help if necessary, or ask you.
- One norm I would like the groups to observe is to stay focused on math during class.
- One norm i would like the group to have is to concentrate on the work we are currently doing.
- Let everyone speak and ask questions when in a group. If someone does not understand help them, don't brush them off, please.

Some students also chose to describe ways they hope the class works. Their answers are here:

- I'd appreciate it if we have one group throughout the entire semester instead of switching groups all the time.
- By seating, it makes us easier to discuss. I like the same row will be in one group.
- Maybe to not always work in the same groups all the time, as everyone has something different to offer and changing up groups occasionally would be a chance to meet new people.
- Maybe briefly reviewing homework in class.

Please complete the quiz below, and then fill out the check-in information on the back side of this page. As you fill out the quiz/check-in, I will come around and greet your groups.

Syllabus quiz

Multiple choice

Choose the best answer to the following questions.

How many hours of help in office hours or TA sessions are available in a typical week?
☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

How much of your grade will be determined by in-semester exams and the final exam?
☐ 20% ☐ 30% ☐ 50% ☐ 100%

If I miss class twice and I am late twice, then my daily course contribution score will be:
☐ 10/10 ☐ 7/10 ☐ 10/13

True/false

Decide whether each of the following statements is true or false.

"I have more than one homework assignment per lecture."
☐ True ☐ False

"I can turn in some of my work late if I need to."
☐ True ☐ False

"In-semester tests (mastery assessments) will eventually cover every single topic we discuss in lecture."
☐ True ☐ False

"If the online homework says I am wrong, but I think it is right, then there's nothing I can do about it."
☐ True ☐ False

"In order to come to office hours and problem sessions, I *must* have questions and I *must* leave once they're answered."
☐ True ☐ False

First day check-in

Some personal details

Preferred name:

Preferred pronouns:

I am a major in, or I hope to major in, ...

Logistics

Are you registered for this course, planning to register, or shopping?

☐ Registered ☐ Planning to register ☐ Shopping

My BiCo username is: ☐ @brynmawr.edu ☐ @haverford.edu

Briefly describe your experience with calculus:

Goals

Briefly describe one goal you have for *this* course:

Briefly describe one goal you have for this *semester* (regardless of MATH B102):

Class formation

In this course, we will be working in small groups *frequently*. Briefly describe one norm you would like the class to observe. (These will be compiled and posted to moodle *anonymously*.)

In the remaining space, if you are comfortable, please indicate anything else you think it is important for us as your professor to know. (If you are not comfortable, or would like more space, please email us or come see us in office hours.)