Math 15 Syllabus

1 Course Requirements

- **Text**: *Calculus: Single Variable, 7th ed.*, Hughes-Hallett *et al.*
  We will cover sections 1.7 - 1.9, 2.1 - 2.6, 3.1 - 3.7, 3.9, 4.1 - 4.3, 4.5 - 4.7, 5.1 - 5.4, 6.1 - 6.2, 6.4, and other sections if time permits.

- Access to the course website: <https://grood.domains.swarthmore.edu/math15.html>

  I will post homework assignments there (instead of Moodle), along with other useful information. There is also a link to a google form that allows you to give me feedback anonymously. You are encouraged to use it!

- A willingness to make mistakes, ask questions, be confused, and work hard!

2 Course Axioms

Axiom 1. *Mathematical talent is distributed equally among different groups, irrespective of geographic, demographic, and economic boundaries.*

Axiom 2. *Everyone can have joyful, meaningful, and empowering mathematical experiences.*

Axiom 3. *Mathematics is a powerful, malleable tool that can be shaped and used differently by various communities to serve their needs.*

Axiom 4. *Every student deserves to be treated with dignity and respect.*

(Course axioms lifted verbatim from those set out in: F. Ardila, *Todxs cuentan: Cultivating diversity in combinatorics.* Notices of the Amer. Math. Soc. **63** (2016) 1164-1170.)

3 Course Structure

I will start class by presenting new material. However, since mathematics is best learned by *actively engaging* with the material, some class time will be spent having you practice solving problems like the examples in class. Understanding these concepts requires lots of time, effort, and, above all, **practice**. You can't learn to drive a car just by reading a book about it; you can't learn to play an instrument by going to orchestra concerts twice a week. Thus, our class time will be (well-)spent by having you *do mathematics*!

4 Course Expectations

"But excitement about ideas [is] not sufficient to create an exciting learning process. As a classroom community, our capacity to generate excitement is deeply affected by our interest in one another, in hearing one another's voices, in recognizing one another's presence. Any radical pedagogy must insist that everyone's presence is acknowledged. That insistence cannot be simply stated. It has to be demonstrated through pedagogical practices. There must be an ongoing recognition that everyone influences the classroom dynamic, that everyone contributes. Often before this process can begin there has to be some deconstruction of the traditional notion that only the professor is responsible for classroom dynamics."
                                                                                                    – bell hooks

I expect you to **arrive on time** and to **put away your cellphones and close your laptops when class starts**. (Taking notes on a tablet is fine.) I also expect that you not leave in the middle of class to use the bathroom, grab a drink, *etc.* Adhering to this policy is a sign of respect for your classmates and for me, as screen use and the mid-class comings and goings can be distracting to others (I personally distract very easily). I am happy to consider exceptions should you need access to your phone or laptop, and of course there are occasions when arriving late or leaving during class is essentially unavoidable.

Make space, take space. Taking space requires courage. Your voice is important and necessary, whether expressing a confusion or offering a not-yet-fully-formed idea on how to move towards a solution. At the same time, everyone needs to be cognizant of the space they are taking in class discussions and group work, and everyone should make space for others to contribute.

We all come to class with different backgrounds and experiences, and having this diversity of thoughts and perspectives is exactly what will make our learning environment richer. **It is my goal to create a learning environment that supports a diversity of thoughts, perspectives, and experiences and honors your identities** (including–but not limited to–race, gender, class, sexuality, religion, ability). I encourage you to inform me of your preferred name (and to correct my pronunciation if I butcher it) and pronouns so that I may appropriately address you. My pronouns are she/her, and I am happy for you to call me either "Cheryl" or "Professor Grood." It is expected that you will respect each other's identities and contributions, and that we all will support each other in our mathematical journey. Please feel free to share any information that will help you thrive in this course. *Every person in this course has the ability to learn this material,* and my goal is to give you all the supports you need to do so.

Mr. Rogers famously said, "There is no normal life that is free of pain." None of us is completely OK. If you are having more trouble than you usually would, I am not going to judge you. I hope you will extend the same grace to me.

5 Resources

The homework I assign is designed to challenge you. *You are not expected to be able to solve all of the homework questions on your own.* Let me say that again: **You are not expected to be able to solve all of the homework questions on your own.** So where should you turn when (note that I wrote "when" and not "if") you get stuck on a problem or have some confusion?

5.1 Me!

It may feel at times that I have thrown you into the deep end, but please know that I am always nearby with an assortment of floaties, life jackets, and pool noodles to help keep your head above water. **My office hours are on Tuesdays, 3:15 pm - 4:15 pm; Thursdays, 3:30 pm - 4:30 pm; Fridays, 3:30 pm - 4:30 pm.** *I am also always happy to schedule appointments with you!*

5.2 Your Classmates

Since "two (or three or four...) heads are better than one," you'll find that working on homework together will make some of the challenging problems more manageable. (You might even have some *fun* while working on math homework!) Of course, you still need to spend time struggling with the material on your own. I also expect each person to write up their own solutions to hand in.

5.3 Student-run Study Sessions: Pirates, Math Clinic, and One-on-One Clinic

Our Math 15 π-rates (Pirates) will hold Study Sessions four nights a week: **Sunday, Monday, Tuesday, and Thursday** from **7-10 pm in SC 104**. These study sessions are a wonderful opportunity to study, do homework, meet and work with classmates, and ask questions about mathematics. Because study sessions are drop-in, you are welcome to come and go as you please. Please write your name and section in the sign-in binder and the time you enter and leave so the Math/Stat Department has a record of your attendance. To make the most of your time at study sessions, be sure to first try problems on your own, or bring questions you have from your text or lecture. Having your textbook and lecture notes handy is essential because these are helpful resources for both you and the Pirate working with you. There will likely be other students at study sessions with questions for the Pirates, so

do not expect to get individual attention the entire time you are there. Be open to working on other problems, thinking about and trying to work through the question you have for the Pirates, working with classmates, or doing other coursework while you wait to speak with the Pirates.

You are also welcome to attend our drop-in Math Clinic, which is held Sunday-Thursday nights at 7 - 10 pm in SC 145. You can utilize Math Clinic in the same way as Pirate Study Sessions, but in Math Clinic there may be students from different courses in attendance as well. In addition to this drop-in Math Clinic, students have the opportunity to pre-schedule an individual 25 minute appointment with a clinician from Sunday-Wednesday 7-10 pm. These appointments can take place either in person in SC 142B or on zoom. Click on the link to the Fall 2024 schedule of math/stat clinics at https://www.swarthmore.edu/mathematics-statistics/academic-support to find the link to sign up for these appointments. Students are required to make an appointment in advance to use the one-on-one clinic; be aware that the window to make an appointment closes three hours before the appointment time. When setting up an appointment, students can elect to submit a topic they would like help with ahead of time and/or email a draft of their work to the clinician.

5.4 Laura Dandridge

Laura Dandridge is the Academic Support Coordinator for the Math/Stat Department. She holds office hours to support students in a handful of courses, including Math 15 . Her office hours this semester are:

- Mondays 2-3:30 in SC 138

- Tuesdays 4:30-6 in SC 149

- Wednesdays 2:30-4 in SC 149

- Thursdays 5-6 pm in SC 149

Laura is happy to meet with you regarding course material or study strategies, so feel free to set up an appointment to meet with her using the link at the bottom of https://www.swarthmore.edu/mathematics-statistics/academic-support. You may also reach out to her directly via email at ldandri1@swarthmore.edu.

6 Assessments

6.1 Homework

Homework is due at **9:30 am** each class day. Homework will usually consist of two parts: problems from the textbook, whose solutions you will write up, and problems on WeBWorK, an online homework system. **Late homework assignments will be accepted only under unusual circumstances.** This course is fast-paced, and the concepts build on what was covered earlier in the course. If you do not stay on top of the material by doing homework regularly, you will almost certainly struggle mightily in this class. At the end of the term, I will drop your lowest two written homework scores and your lowest two WeBWorK scores.

Written homework
Your written homework will be graded on both the correctness of the mathematics and the clarity of your write-ups. I encourage you to work together, but you should note at the top of your homework whom you collaborated with, and you should take care to write up separate, distinct solutions.

You will submit your homework on Gradescope, an online platform that allows for your graders and me to more easily provide detailed feedback on your homework assignments. I do not need hard copies of your written work. To access Gradescope, go to www.gradescope.com; when you try to log in, select the option "log in with your school credentials" and follow the prompts. You should be taken to a dashboard where you can see a link to our Math 15 course. When submitting an assignment, you will be asked to upload your work and to **identify which pages contain which problems**. Taking less than a minute of your time to match the problems to the pages will save the graders much time and hassle. Also, be sure to **check your scans to make sure they are dark enough to be read, especially if you write your work in pencil**. If you need help with submitting assignments on Gradescope, check out https://help.gradescope.com/article/ccbpppziu9-student-submit-work for written instructions, https://www.youtube.com/watch?v=quBWbQ5opT0 for a video on submitting using the Gradescope app, or https://www.youtube.com/watch?v=nksyA0s-Geo for a video on submitting using the Gradescope website.

WeBWorK

In addition to the written work that you submit on Gradescope, you will have a WeBWorK assignment to complete before each lecture. WeBWorK is an online homework system that has many benefits. One is that you can get instant feedback as to whether you are doing a problem correctly or not. Another is that you can attempt a problem as many times as you want before the due date. Furthermore, **once you have done a problem correctly, it is always listed in my gradebook as correct, even if you go back and do it incorrectly later.** This means you can use WeBWorK to review course material without any danger of changing your grade. It also means that it is well within everyone's capability to earn an 'A' for this portion of their course grade. While WeBWorK keeps track of how many times you attempt a problem, I do not use this information in any way.

6.2 Exams

There will be two midterm exams and one final exam. The first midterm will be **Monday, October 7, from 8:00 pm - 9:30 pm** and the second will be **Wednesday, November 13, from 8:00 pm - 10:00pm**. If you have **any other** pre-scheduled commitments during this time (such as a class, athletics practice or a game, rehearsal for a performing group, work, *etc*), I ask that you take the exam at a different time later in that week in order to be respectful of the people who expected you to be free during this time. You must let me know by the end of the day on **Monday, September 16** if you have a conflict with either midterm exam. The final exam will be scheduled by the registrar; don't spend money on plans to return home until after you know your final exam schedule.

6.3 Assessment weighting:

Here is how each component of the assessments will contribute to your final course grade. Written Homework: 20%; WeBWorK: 10%; Exam 1: 20%; Exam 2: 20%; Final exam: 30%.

7 Technology policy[1]

While technology is a powerful tool that can enhance your learning experience, it's essential to use it correctly and effectively, to maintain academic integrity, and ultimately to attain a genuine understanding of the course material. The following guidelines are intended to ensure a fair and effective learning environment.

7.1 Appropriate use of technology

You are encouraged to use technology, such as WolframAlpha, Desmos, scientific calculators, and graphing calculators to aid your learning and understanding of concepts. However, you should refrain from using these resources and generative artificial intelligence (AI) tools like ChatGPT to solve homework problems. All submitted materials, including written homework, online assignments, and exams must be your own work. **Using a technology product to generate answers or whole or partial solutions and submitting them as your own work constitutes academic dishonesty.**

7.2 Balancing technology and learning

Without a doubt, technology can enhance, streamline, and supercharge some aspects of your mathematical work. However, it is easy for technology to become a crutch that impedes your ability to grasp fundamental concepts, prevents your mastery of important mathematical skills, and slows your acquisition of essential problem-solving skills. Over-reliance on technology may hinder your progress in the course.

7.3 Caution using generative AI

Tools like ChatGPT may be used as aids in studying and for learning outside of assignments and exams. They can provide additional insights and explanations that support, enhance, or clarify your understanding of the material. However, keep in mind that these new and largely untested products often produce incorrect, incomplete, or misleading answers, especially in response to mathematical questions. Exercise critical thinking and cross-reference the responses with course materials to ensure accuracy. When in doubt, ask the professor.

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[1]Very lightly adapted from policy written by mathematics professor Dave Richeson from Dickinson College.

7.4 Technology during exams

Cell phones, graphing calculators, scientific calculators, computers, and the like are not permitted during exams. They will also not be needed, as the exams are written with this restriction in mind. However, every student will be given a simple four-function calculator that can be used for arithmetic calculations.

7.5 Note-taking devices

Tablets such as iPads or Surfaces are permitted in class for note-taking purposes only. Laptops may not be used in class without prior approval from the professor. This policy aims to foster an environment conducive to focused learning and active participation.

7.6 Cell phone policy

To maintain focus and out of respect for your peers, limit cell phone usage to emergencies only. Texting, web browsing, and other non-academic activities can disrupt the learning experience. Please keep your device on silent mode and stowed away.

8 Academic Dishonesty

Academic dishonesty is a serious offense that is not tolerated. **Be aware that giving your assignment to another student to copy and copying portions of graded homework assignments from another student, a solution manual, or technology aids such as WolframAlpha are all examples of academic dishonesty.** You are encouraged to work together, but *you should write up your answers separately.* Any student engaging in academic dishonesty in this course will receive a zero on the assignment in question and the case may be also brought to the College Judicial Committee.

9 Accommodations Statement

If you believe you need accommodations for a disability or a chronic medical condition, please visit the Student Disability Services website for details about the accommodations process. Since accommodations require early planning and are not retroactive, contact Student Disability Services as soon as possible. You are also welcome to contact me privately to discuss your academic needs. However, all disability-related accommodations must be arranged, in advance, through Student Disability Services.

Let's have a great semester!