Analytic Geometry & Calculus I

MATH 180-2756 (Online Course)

Class Start and End Date: August 19 through December 16

Class Location: 100% Online via Canvas (no class formal meetings)

How to Get in Touch with Me (Your Instructor, Anna)

Instructor: Annalinda Arroyo (she/her) **Answers to** Anna, Ms. Anna, Professor/Teacher, Ms. Arroyo
College Email: annalinda.arroyo@gcccd.edu **Preferred Method of Contact:** Canvas Inbox and Phone Text
In-person Office: H-116 **Virtual Office:** Click to join me on Zoom

If I'm not immediately available, I will respond within 24-hours to messages received Monday through Thursday. Any messages received over the weekend will be responded to first thing Monday morning (or sooner if I can).

Student Hours

This is time I set aside to be in my office or on Zoom so any of my students can drop in to ask questions, chat, and share their knowledge/learning. Don't be shy, join me for Student Hours anytime! I am here to support you and address your concerns.

- **Meet me in-person in H-116 or the STEM Center (1st floor H-building) –** Tuesdays 8 to 8:30 am and 12:45 to 1:15 pm, Thursdays 12:45 to 1:45 pm
- **Meet me virtually via Zoom –** Wednesdays 3 to 4 pm, Thursdays & Sundays 9 pm to 10 pm
- **Need an appointment? Let me know when you are available to meet me virtually via Zoom** – Mondays & Wednesdays 9 am to 5 pm and 8 to 10 pm; Fridays 11 am to 5 pm; Sundays 2 to 5 pm and 8 to 10 pm.

Welcome to the course!

Hello and welcome to all my Math 180 people! My name is Annalinda Arroyo but feel free to call me Anna. I will be your Calculus I instructor this semester. This class is the first of the three-part calculus series that sets you on a clear path for future studies in science, engineering, computers, and math. Building on the knowledge each of you bring into the class, we will discover, develop, and apply the theory and techniques of analysis.

The methods and concepts we will cover can get difficult, but I believe in your capacity and am invested in your success. We can tap into capacity and avoid frustrations when we make a conscious effort to work together as a community of teachers and learners who support each other's learning in this class. As your teacher and a fellow learner, I am excited for us to process our thoughts and ideas together as we mess with concepts within our course.

Throughout the semester I encourage you to be honest with yourself and with me. Many times, you will not be the only person with questions about a topic/concept, so reach out to our Math 180 community using our Canvas' ***discussion boards*** **(**a link to a discussion board can be found within EVERY Canvas assignment). If you recognize that you are struggling with the material or a deadline, please reach out to me directly anytime (as described in the ***How to Get in Touch with Me*** section above). I welcome your questions and want to know what struggles you are dealing with so that together we can find solutions that work to get you and keep you on track. In looking out for each other, we share the hardship of learning new things making us more likely to persevere and therefore achieve.

Hate Free Zone

In our classroom (in person, on Zoom, or online), we should feel free to express our opinions and ideas in a respectful manner. We all need to be open to listen and appreciate differences in opinions, life experience, worldviews, values/beliefs, etc. **I value and affirm the rich diversity of human experiences, but we must all do our part in developing and maintaining our class as a hate-free zone, a positive learning environment for all.** Comments or actions that discriminate based on race, gender identity, age, physical or mental ability status, language, religion, sexual orientation, veteran status, physical characteristics, fitness level, etc. will not be tolerated. While we will often disagree with other people, it does not give anyone the right to intentionally hurt others with words or to discriminate against them. **Words have power, so use them for good and not perpetuate hate.** Please keep this in mind with EVERY interaction you have.

Any information above is tentative and may change at the discretion of the instructor at any time. This course adheres to the policies outlined in the Cuyamaca College catalogue. For further information, see *Academic Policies* stated in the catalog.

What You Will Need for Our Course

Required Materials

1. **Textbook called *Interactive Calculus I on Canvas* – FREE**
   There is NO textbook to buy because we will use online interactive learning materials available in our Math 180 Canvas course *Modules*. **If you cannot log into Canvas, contact the Cuyamaca College Help Desk at (619) 660-4395 or email c-helpdesk@gcccd.edu.**

2. **Graphing Calculator – $0 to $150 (Texas Instruments *TI-84 Plus recommended; image to the right)***
   Options from free to full-price:
   - **During class using your Student ID**, I can provide you with a TI-84.
   - **Free semester-long check out of a TI-84 calculator from our campus Library**. If you have any questions or want to check on availability, email cuyamaca.circulation@gcccd.edu or call (619) 660-4416.
     - **They will need** your **name** (you can show a photo ID, any will do), your student **ID number**, and **proof of your enrollment in a Cuyamaca math class** (printed out, schedule pulled up on your smartphone, or a screenshot of it).
   - **Simulators for smartphones** – Navigate to your Play Store and search for and install a graphing calculator simulator (students have suggested Desmos, CALC84, Graphing Calculator X84, etc, but I would really appriciate your input)
   - **Ask a friend, family member, or neighbor** – Many people have one they no longer use.
   - **Purchase one as cheap as possible**

   WARNING: I am only able to help you learn how to use the TI graphing calculators or Desmos. I cannot help you with any other calculators like TI-Nspire, Casio, etc.

3. **Reliable Internet Access**
   In this class, teaching and learning occurs at your own pace (asynchronously) on Canvas. You will need reliable internet access and a computer to work through our materials on Canvas, watch videos, and complete assignments. **Let me know throughout the semester if Wi-Fi or access to a computer ever becomes an issue.** I can contact and connect you with available campus resources.

Resources – Cuyamaca Has Got You Covered

Faculty, student tutors, counselors, and more are ready and waiting to provide you with services: mapping out your educational plan, choosing classes, applying for scholarships, finding student aid, refining study skills, locating and using sources for an essay. Whatever you need, we have someone who can help. Some services are listed below, but more can be found in the ***Orientation & Tools for Success*** module of our Canvas course. Remember that you can always reach out to me if you are not sure.

Academic Accommodations

Academic accommodations are available for students with disabilities. Please identify yourself to me and to the Disabled Students Programs & Services (DSPS) staff so that the appropriate accommodations can be ensured. If you suspect you have a learning disability or need services relate to a disability, contact the DSPS Office, G-238, at the Student Services One-Stop Center or call (619) 660-4239. Video phone: (619) 567-4275.

Canvas Assistance

New to Canvas? Check out the Canvas help for students. 24/7 support is available for Canvas, call 1-844-592-2205 for help.

Help Desk

The Help Desk is your best resource for troubleshooting technical difficulties associated with your student accounts. Email c-helpdesk@gcccd.edu anytime or call (619) 660-4395 and provide your student ID number at the time of your call.

Cuyamaca Cares

Cuyamaca College believes that food, housing, and mental wellness are basic rights that you deserve to have. If you are experiencing homelessness, or need assistance securing these basic rights, please contact the Cuyamaca Cares Basic Rights Center at 619-660-4203 or visit our website at www.cuyamaca.edu/cuyamaca-cares.

Tutoring

The easiest way to request an appointment is to log into Canvas, click the blue "Tutoring" link on the left side, and complete the request form. You can also directly email Cuyamaca.Tutoring@gccccd.edu with the course and time you would like to meet with a tutor, or visit their website at www.cuyamaca.edu/tutoring, or leave a voicemail message with your call back information (name, phone number, id, class number) at (619) 660-4525. Tutoring options and times are listed below.

- **In-person** (30 -minute one-on-one and 1-hour group sessions)
  - Monday through Friday 9 am – 3 pm
- **Zoom** (30-minute one-on-one and 1-hour group sessions)
  - Monday, Thursday, and Friday 9:30 am – 4 pm
  - Tuesday and Wednesday 9:30 am – 6 pm
- **Email** (send your essay or submit a question)
- **Night and Weekend Services** – provided for most courses are by an **outside service** called *NetTutor*.

Other useful links: Course and Assignment Resources and Guides; The Cuyamaca Tutoring YouTube Channel;

What Students who used Cuyamaca Tutoring Want You to Know

"Use Tutoring! I was skeptical, but I was wrong. My tutor was great and helped me talk through concepts until I understood."

"Just do it. Don't be intimidated or ashamed of asking for help."

Our Class – A Community of Teachers and Learners

To engage with the course material in a meaningful way and boost your success in this course, the math content and assignments are all broken into smaller bite-size pieces where we learn and practice little by little before putting it together.

Typical Online Canvas Experience

- **Review.** Before some modules are *Prep Modules* with just-in-time reviews to get us ready for content learning.
- **Learn.** Read through and watch short video walk-throughs of examples on 1 to 3 Canvas pages before practicing.
- **Practice.** Complete a short quiz or written assignment. or investigate assignment. This means you see several assignments on your To-Do List in Canvas but remember each of them are short!
- **Test yourself, help your peers, and reflect.** After a few cycles of learning and practicing, complete a *Checkpoint 1* quiz covering all the topics in the module, and submit your written work to a few *Checkpoint 2* questions where you compare your answers with a peer and exchange feedback before its graded.
- **NOTE:** Every assignment has a link to a *Questions, Tips, & Answers* discussion board so we can ask each other questions and provide support when we're stuck! Our learning community is always just a few clicks away.

Grade Breakdown & Category Descriptions

Course grades are earned based on the skills developed and the effort shown when working through our key learning goals. Learning is a process that involves collaboration, struggles, mistakes, and recoveries. Parts of your grade are based on low-stakes assignments that value effort and a little risk-taking as you grow your skills. Other parts of the grade are based on higher-stakes comprehensive assessments that showcase your achievements of our course learning goals. The best part is all this done with the support of your peers and assignment redoes that give us chances to learn from our mistakes.

Math 180 Grade Summary

Categories	Percentage
Prep & Review + Investigate	15%
Interactive Reading	15%
Homework	15%
Module Checkpoints (Computer Based)	15%
Module Checkpoints (Peer Reviewed)	10%
Unit Checkpoints (Computer Based)	15%
Final Exam	15%

*Below the table are the details of each Math 180 Grade Category

Grading Scale

Passing Grades	Not Passing
A+ = Over 97%	D = 60-69.9%
A = 93-96.9%	F = Below 60%
A- = 90-92.9%	The letter grade of C-, D+, or D- will not be assigned
B+ = 87-89.9%	
B = 83-86.9%	
B- = 80-82.9%	
C+ = 77-79.9%	
C = 70-76.9%	

To pass this class with a grade of C or better you need to earn at least a D on the Final Exam AND a minimum overall grade of 70%

Prep & Review + Investigate = 15%

All our skills get rusty over time, so before some of our Calculus modules in Canvas are short prep modules (5 to 15 minutes depending on your familiarity with the module's content). Each Prep module reviews some of the prerequisite skills and concepts needed to successfully complete the main module.

Some modules include “Investigate” activities designed to acquaint you with a topic before formal instruction begins. By pushing our brains to play with problems before getting guided explanations, we get the chance to recognize different types of issues involved in the upcoming lesson making us better prepared to learn the material. There are no solutions provided for these problems, but don't worry if are not confident in your answers. For the Investigate activities, your effort is more important than the correct answers! If you commit a good-faith effort, your productive struggle will serve you well in tackling the new topic. After you finish the lesson, things should be much clearer, and you will have opportunities to resubmit a corrected version of your work.

The THREE lowest scores from this category will not be counted toward your grade (will be dropped).

Interactive Reading = 15%

In this Canvas course, the learning pages include instructional text, written examples, graphics, and instructional videos. After one to three learning pages, you'll complete a short interactive reading quiz or homework assignment (explained below); you can use these graded quizzes to assess your skill attainment and concept mastery from the previous learning page(s). You have three attempts on each quiz, so to improve your score, use the feedback from each attempt and go back to previous examples whenever needed.

The TWO lowest scores from this category will not be counted toward your grade (will be dropped).

Homework = 15%

Each learning module in our Canvas course includes one to three short homework assignments where you can upload your work or type-out your response(s) in the available textbox. After submitting a good-faith first draft, you will be able to check your work using the ANSWER(S) page that follows the assignment. When needed, you can resubmit a corrected final draft.

The TWO lowest scores from this category will not be counted toward your grade (will be dropped).

Module Checkpoints = 25% (15% Computer-Based + 10% Peer-Reviewed)

At the end of each learning module, you will have two types of Module Checkpoints summarizing the material in that module. The **first type** is a computer-based checkpoint that gets automatically graded and provides immediate

feedback. You will have three attempts on each question and can revise your work after reviewing the feedback. The **second type** is a peer-reviewed checkpoint similar to a homework assignment, where you submit your written work on two to five questions. There is no automatic feedback or ANSWER(S) page for Checkpoint 2's, so we'll do peer reviews to get feedback before submitting the final drafts (corrected work) I'll grade.

All our participation contributes to each other's success on these assignments!

The TWO lowest scores from each Module Checkpoint category will not be counted toward your grade (will be dropped).

Unit Checkpoints (Computer Based) = 15%

In Canvas, modules are grouped into Units. At the end of each Unit is an automatically graded Unit Checkpoint WITHOUT feedback … it is time to study and push ourselves. You will have three attempts on each question and up to two versions of each question. Unit Checkpoints are like Checkpoint 1 assignments but instead of covering one module, they cover several, like an exam.

The SINGLE lowest score from this category will not be counted toward your grade (will be dropped).

Final Exam = 20% (10% Part 1 + 10% Part 2)

A comprehensive final exam will be given at the end of the course. The final exam is mandatory and may not be dropped. It's a computer-based final (similar in structure to Checkpoint 1's and Unit Checkpoints) where you have three attempts on each question but only have 2.5 hours to complete it once you have started. You will have several days to start the tests once they are posted/available, but will lock at **11:59 pm on Monday, December 16**.

The *Final Exam* score cannot be dropped. As mentioned before, to pass this class with a grade of C or better you need to earn at least a D on the Final Exam AND a minimum overall grade of 70%.

Class Expectations & Guidelines

Time Commitment

So many things in our lives demand our time and attention, so it is important to know how much time we can expect to spend on our class each week. Math 180 is defined as a 5-unit course over 16-weeks, where students in a face-to-face class meet 5-hours a week and study an average of 10-hours a week outside of class. This means that **on average, students will need to commit 15 hours per week to successfully complete this class.** Only you know what your commitments and schedule are like, so organize your time to fit your needs. **Reach out to me anytime if you begin to feel this time pressure, so we can get things figured out and keep you on track.**

Attendance & Participation

In this class, we function as a team! Remember there are computer-based assignments that you complete on your own, and peer-reviewed assignments that provide us with teaching and learning opportunities where we rely on each other's feedback. To foster a positive and productive learning experience, regular and substantive participation in Canvas is a must.

During the First Week

To count as your attendance during the first week and to avoid being dropped, be sure to **log into our Canvas course and complete the assignments in Orientation Module by 11:59 pm by Wednesday, August 21.** I will reach out to you in case you forget to participate. The first module containing Math 180 content will unlock after you complete the orientation module.

Throughout the Semester Online

Assignments will be due weekly (typically on Mondays, Wednesdays, and Thursdays) on Canvas. To avoid falling behind, it is important to **log in to complete work on Canvas regularly**. If you do not make progress for four or more consecutive days, I'll send out a "Wellness-Check" email to see how you are doing and offer my support. Remember that you do not need to wait for me to contact you, your success is important to me and always love to hear from my students!

Grading & Feedback (Online)

The feedback in this class is intended to help you determine how to invest your time and energy to maximize learning.

- **Grading.** To provide opportunities where we can learn from our mistakes, there are re-dos and corrections for almost every assignment.
- **Feedback To and From Your Peers.** To support your efforts in submitting your best work and developing our communication skills as a class, each of you will provide instructive comments when engaging on Canvas discussion boards and on peer reviews within 3-days of the first draft being due. The goal is to use these comments to improve and correct your work.
- **Feedback From Me.** To support tracking your progress in the course, I will do my best to grade your work within 3 days after a due date. For peer-reviewed assignments, the 3-day window begins after the final drafts are due.

Many Canvas Assignments will be automatically graded with feedback readily available on that page or displayed immediately after submission. However, some quizzes and ALL peer-reviewed assignments require instructor grading so feedback will be in the form of comments made on the assignment via your Canvas Gradebook. **I will grade many but not all these assignments, and you will not know in advance which assignments will be graded.** The ungraded assignments will count as practice work that will not affect your grade.

Here are a few important links to teach you how to access feedback.

- How to View Rubric Results
- How to View Assignment Comments on a Computer
- How to View Assignment Comments on the Canvas App
- How to View Annotation Comments (These are comments written directly on your assignment as opposed to comments typed in the "assignment comments" box.)

Re-Dos & Corrections

It's not about being perfect when you're learning. When we make mistakes, a crucial part of learning is to fix those mistakes, find out where we went wrong, and understand why or how that is. In this class, you will have opportunities to re-do all computer-based assignments as well as make corrections to all written assignments.

- **Peer Reviewed Assignments**. Grades for peer-review assignments are based on **effort and completion of four tasks**, not on the accuracy of your first draft. Below are the four tasks, but directions describing each and how to do them on Canvas will be provided in the assignment.
  1. **Review the Rubric**
  2. **Submit your first draft.**
  3. **Complete your assigned peer review.**
  4. **Submit your corrected work (a final draft) with a Self-Evaluation.**
- **Computer Based Assignments.** These assignments are graded automatically (no waiting) and allow for multiple attempts. After each attempt, you will receive immediate feedback for all your answers. Review the feedback to reinforce the reasoning behind the correct answers and help guide your learning for incorrect answers. Doing this will give you a chance to process and review the material before moving on or improving your score on future attempts. **Only your highest score will count towards your grade.**

How to Move Forward When Things Get Tough

Late Work

As the Social Psychologist Dr. Devon Price (they/their/theirs) said in an article …

"People do not choose to fail or disappoint. No one wants to feel incapable, apathetic, or ineffective. If you look at a person's action (or inaction) and see only laziness, you are missing key details. There is always an explanation. There are always barriers. Just because you can't see them, or don't view them as legitimate, doesn't mean they're not there. Look harder."

Any information above is tentative and may change at the discretion of the instructor at any time. This course adheres to the policies outlined in the Cuyamaca College catalogue. For further information, see *Academic Policies* stated in the catalog.

I know in my heart that you want to succeed in this class, so I want to say that **success is not being perfect**. Success is learning the material. In preparing you for future studies in science, engineering, computers, and math, my goal is for you to learn and use as much of our course material as possible, so I will not deduct penalty points for late work. If you need more time, or if you are missing assignments, there are opportunities to submit assignments after the original due date. **Computer-based assignments are available throughout the semester** while **peer-reviewed assignments require active communication with each other within a few days**. This allows us to give each other feedback while the material is fresh and use the comments to resubmit our corrected work. On these assignments, you can earn credit for the work, but not the peer review portion of the grade if it is too late and no reviews are available. Our common goal is your success, so never be too shy to reach out to me if you begin to feel the pressure of deadlines.

Academic Integrity

Academic integrity is about being honest and holding ourselves accountable in all academic pursuits, even in the face of challenges. This involves doing and submitting your own work, getting credit for your ideas, and **giving credit** to those whose work we refer to or use **each time** and **every time**.

Maintaining academic integrity in our class is easiest when you and I work together! For each graded assignment, it is important for us both to clearly communicate what our thoughts and expectations are. I know you want to be successful and proud of your work, so if you are not sure how to do an assignment, have questions, need more time, anything at all, contact me right away. If you are thinking about using any apps, websites, or other services let me know, many do not provide adequate explanations, they have mistakes, or use methods beyond the scope this course. When we meet, I can guide you to other useful resources.

In general, students are expected to adhere to the College's Academic Honesty/Dishonesty Policy found in the *Academic Policies & Procedures* section of the College Catalog. If you are suspected of academic dishonesty, I will reach out to you to genuinely find out how things are going, identify the cause, and make a plan how to approach future assignments. If this happens again or becomes a pattern, I am concerned that this behavior is jeopardizing your future success. The Dean of Academic Affairs will be notified as they have access to more resources and will be able to better guide you going forward.

College Catalog Description – MATHEMATICS 180 (5 units)

Analytic Geometry & Calculus I

Graphic, numeric, and analytic approaches to the study of analytic geometry, limits and continuity of functions, and introductory differential and integral calculus. Applications involving analysis of algebraic, exponential, logarithmic, trigonometric, and hyperbolic functions from a variety of disciplines including science, business and engineering. First of three courses designed to provide math, science, and engineering students with a solid introduction to the theory and techniques of analysis.

Prerequisite for Math 180 - "C" grade or higher or "Pass" in MATH 170 and 175, or MATH 176 or equivalent.

Student Learning Outcomes

Upon successful completion of this course, you will be able to:

1. Use analytical, numerical, or graphical methods to evaluate or interpret limits, derivatives, and integrals.
2. Apply differentiation or integration to solve interdisciplinary application problems and interpret the results in context.

Tentative Course Calendar

* Due dates will be updated and maintained within our Canvas course *

Week 1 (8/19 – 8/25): Introductions, 2.1 Prep, 2.1, 2.2 Prep Part 1 & 2

Week 2 (8/26 – 9/01): 2.2, 2.3 Prep, 2.3

Week 3 (9/02 – 9/08): 2.5 Prep, 2.5, 2.6 Prep, 2.6, **Labor Day**

Week 4 (9/09 – 9/15): 2.7, 2.8

Week 5 (9/16 – 9/22): Review Unit 2, **Unit 2 Checkpoint**, 3.1 Prep, 3.1

Week 6 (9/23 – 9/29): 3.2 Prep, 3.2, 3.3 Prep, 3.3

Week 7 (9/30 – 10/06): 3.4 Prep, 3.4, 3.5

Week 8 (10/07 – 10/13): 3.6 Prep, 3.6, 3.9

Week 9 (10/14 – 10/20): 3.10, 3.11 Prep, 3.11

Week 10 (10/21 – 10/27): Review Unit 3, **Unit 3 Checkpoint,** 4.1 Prep, 4.1, 4.2

Week 11 (10/28 – 11/03): 4.3, 4.4 Prep, 4.4

Week 12 (11/04 – 11/10): 4.5 Prep, 4.5, 4.6 Prep, 4.6

Week 13 (11/11 – 11/17): Review Unit 4, **Unit 4 Checkpoint**, 5.1 Prep, 5.1, **Veteran's Day**

Week 14 (11/18 – 11/24): 5.2, 5.3

Fall Break (11/25 – 12/01): No classes this week!

Week 15 (12/02 – 12/08): 5.4 Prep, 5.4, 5.5, 5.6 Prep, 5.6

Week 16 (12/09 – 12/15): Review Unit 5, **Unit 5 Checkpoint,** 6.1, Comprehensive Review

Last Day (12/16): All assignment close on Saturday Dec 14 at 11:59 pm; the Final is due on Monday, Dec 16 by 11:59 pm

Important Dates to Keep Track Of

Warning: Below you can see that the college has set Sunday September 1 as the last day a student can add this course. However, I will not add students after Wednesday, August 21.

- **August 19, Monday** First day of class
- **September 1, Sunday** Last day to add classes,
  Last day to apply for a refund and to drop without receiving a "W" (Withdrawal).
- **September 2, Monday** **Holiday** – (Labor Day) **No classes on Monday!**
- **October 11, Friday** Last day to apply for Spring 2024 Degree/Certificate
- **November 11, Monday** **Holiday** – (Veteran's Day) **No classes on Monday!**
- **Nov 25 – Dec 2** **Holiday** – (Fall Break + Thanksgiving) **No classes this week!**
- **November 9, Saturday** Last day to drop with a "W" (Withdrawal) from semester length classes
- **December 12, Thursday** **Final Exam Part 1**; during class
- **December 16, Monday** **Final Exam Part 2**; due on Canvas by 11:59 pm
  Last day to apply for P/NP (Pass/No Pass)
- **December 20, Friday** Instructor Grade Deadline

That's it for now, stay in touch and have a great semester!