Spring 2023 **Pre-Calculus with Support:** Functions & Graphs

MATH 176 (Section 9990 In-Person) with MATH 076 (Section 9989 Online)

Class Days and Times: Mondays and Wednesdays, 11:00 am – 1:50 pm

Class Location: Cuyamaca College, H-building, Room 113

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

Instructor: Annalinda Arroyo (she/her) In-person Office: H-116

Answers to Anna, Ms. Anna, Professor/Teacher, Ms. Arroyo College Email: <u>annalinda.arroyo@gcccd.edu</u> Preferred Method of Contact: Canvas Inbox 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.

In-Person & Virtual Student Hours (H-116/STEM Center & Zoom)

- Mondays & Wednesdays 2:00 3:00 pm
- Tuesdays 4:00 5:00 pm
- Thursdays 1:30 2:30 pm
- **Note:** The Zoom link to join virtually is available above.

Welcome to the course!

Hello and welcome to all my Math 176 people! My name is Annalinda Arroyo but feel free to call me Anna. I will be your Precalculus instructor this semester and together we will be strengthening and developing your skills in preparation for Calculus.

At Cuyamaca College we have a few entry level math courses that can start you on your career/academic path, and our Math 176 Precalculus course will cover a collection of concepts and skills centered around the study of functions needed for Calculus. This means that this class sets you on a clear path for future studies in science, engineering, computers, and math. If these majors generally describe your interests, then this class is the best entry level course to start you on your way. BUT ... if these majors do not describe your interests or if you have questions, then please email me (annalinda.arroyo@gcccd.edu). I would love to hear more about your goals and connect you with our amazing Math Department Chair (tammi.marshal@gcccd.edu). Tammi can help you find the perfect math course for your needs AND get you setup in that course with lighting speed.

Building from the knowledge you all 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 success. We can tap into that 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 only person with questions about a topic/concept, so reach out to our Math 176 community using our Canvas' discussion boards (a link to a discussion board can be found within each 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 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.

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 matter. Please keep this in mind with EVERY interaction you have.

What You Will Need for Our Course

Required Materials

1. Textbook called Interactive Precalculus on Canvas - FREE

There is NO textbook to buy because we will use online interactive learning materials available in our Math 176 Canvas course. If you cannot log into Canvas, contact the Cuyamaca College Help Desk at (619) 660-4395 or email <u>c-helpdesk@gcccd.edu</u>.

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 <u>Library</u> Monday through Thursday 9:00 am 7:30 pm. If you have any questions or want to check on availability, email <u>cuyamaca.circulation@gcccd.edu</u> 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 CALC84 (this is my first time using this app, so 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 live (synchronously) in person and on your own time (asynchronously) on Canvas. You will need reliable internet access and a computer to work through our materials on Canvas, watch videos, and complete assignment on WebAssign. 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 potential campus resources.

Resources – Cuyamaca Has Got You Covered

Faculty (like me), 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, study skills, locating and using sources for an essay. Whatever you need, we have someone who can help. A few services are listed below, but more can be found in Module 1 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



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have a learning disability or need services relate to a disability, contact the <u>DSPS Office</u>, 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 <u>Help Desk</u> is your best resource for troubleshooting technical difficulties associated with your student accounts. Email <u>c-helpdesk@gcccd.edu</u> anytime or call (619) 660-4395 and have 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 <u>www.cuyamaca.edu/cuyamaca-cares</u>.

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 <u>Cuyamaca.Tutoring@gccccd.edu</u> with the course and time you would like to meet with a tutor, or visit their website at <u>www.cuyamaca.edu/tutoring</u>, 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) in B-167 and 1st floor of H-Building
 Mondays, Tuesdays, Wednesdays, and Thursdays 9 am 2 pm (none on Fridays)
 - **Zoom** (30-minute one-on-one and 1-hour group sessions)
 - Mondays and Thursdays 9:30 am 6 pm
 - Tuesdays and Wednesdays 9:30 am 7 pm
 - Friday 10 am 3 pm
 - Email (send your essay or submit a question)
- Night and Weekend Services provided for most courses are by an outside service called *NetTutor*.

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

Forget what you know about the traditional math classroom where teachers lecture, and students diligently take notes while struggling to understand. Learning math this way may work for some, but for many, the traditional math classroom does not allow students to engage with the course material in a meaningful way. Typically, students do not interact with the lesson until they attempt the homework a few days later. To improve learning and boost your success in this course you'll study math in a student-centered classroom. So how does it work?

Typical Class Work

- Group activities to introduce and motivate key concepts for some (but not all) of the course topics.
- Just-in-time reviews when we get stuck on topics.
- Discussions and mini lectures as needed to support concept attainment and boost skill mastery.
- Peer-review feedback.

Cuyamaca College Typical Homework

- Interactive assignments on Canvas.
- Review course material and collaborate with classmates.

Grade Breakdown & Category Descriptions

Course grades are earned based on the skills you develop and the effort you contribute as we work through our key learning goals. Learning is a process that involves collaboration, struggles, mistakes, and recoveries. Some of your grade is based on low-stakes opportunities that value teamwork, communication, and risk-taking while other parts of the grade are based on more comprehensive assessments that showcase your achievements of our course learning goals.

Math 176 Grade Summary		Grading Scale	
Categories	Percentage	Passing Grades	Not Passing
Investigate	10%	A+ = Over 97%	D = 60-69.9%
Interactive Reading	10%	A = 93-96.9%	F = Below 60%
Homework	15%	A- = 90-92.9%	_
Module Checkpoints (Computer Based)	15%	B+ = 87-89.9%	
Module Checkpoints (Peer Reviewed)	20%	B = 83-86.9%	The letter grade of
Unit Checkpoints (Computer Based)	15%	B- = 80-82.9%	will not be assigned
Final Exam	15%	C+ = 77-79.9%	
*Below the table are the details of each		C = 70-76.9%	
Math 1/6 Grade Category	or bottor you n	and to earn at least a D e	a tha Einal Exam AND a
To pass this class with a grade of C	minimum overal	l grade of 70%	
	Math 076 Gro	ading Scale	
	Passing	Not Passing	
70	% and above	Below 70%	
To Pass this class you need to s	submit your Fina	I AND earn a minimum ov	verall grade of 70%.

Investigate = 10%

Many modules include "Let's Investigate" activities. These activities are designed to acquaint you with a topic before any formal instruction begins. By priming your brain to recognize the types of issues involved in the upcoming lesson, you will be better prepared to learn the material. There are no solutions provided for these problems, but don't worry if you can't solve them or are not confident in your answers. For the Let's 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 as you tackle the new topic and you will still earn a good grade for your work. After you finish the lesson, things should be much clearer.

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

Interactive Reading = 10%

In this Canvas course, the learning pages may include instructional text, written examples, graphics, and instructional videos. After one or two learning pages, you'll complete a short interactive reading quiz; 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! Use the feedback from each attempt to improve your score.

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

Cuyamaca College Homework = 15%

Each learning module in our Canvas course includes one to three short "homework" assignments. The TWO lowest scores from this category will not be counted toward your grade (will be dropped).

Module Checkpoints = 35% (15% Computer Based + 20% Peer Reviewed)

At the end of each learning module, you will have two types of Module Checkpoints. The **first type** is automatically graded with feedback. You will have three attempts on each question, and you can revise your work after reviewing the feedback. The **second type** is a peer-reviewed assignment that provides an opportunity for you to submit your written work on two to five questions. There is no automatic feedback on the second type of Module Checkpoint, so the peer review is the only type of feedback that may be available before the assignment is graded. Also, you cannot resubmit the second type of Checkpoint after it is graded. Think of both types of checkpoints as take-home quizzes. **The TWO lowest scores from each Module Checkpoint category will not be counted toward your grade (will be dropped).**

Unit Checkpoints (Computer Based) = 15%

Modules are organized into units in Canvas. At the end of each Unit is an automatically graded Unit Checkpoint with feedback. You will have three attempts on each question, and you can revise your work after reviewing the feedback. Think of each Unit Checkpoint as a take-home exam covering multiple modules. The SINGLE lowest score from this category will not be counted toward your grade (will be dropped).

Final Exam = 15%

A comprehensive final exam will be given at the end of the course. The final exam is mandatory and may not be dropped. Half of the final will be in class on **Wednesday**, **May 31 (10:30 am – 12:30 pm) in H-113.** The other half you will have several days to complete once it is posted/available and will be due by **11:59 pm on Friday**, **June 2**. The *Final Project* score is equal to the average score of ALL the parts, no single score will 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 Project 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 176+076 is defined as an 8-unit course over 16-weeks, where students in a face-to-face class meet 8-hours a week and study an average of 16-hours a week outside of class. This means that **on average**, **students will need to commit 24 hours per week to successfully complete this class.**

Remember that all of us are in this together, and the support of your classmates and I are just a few clicks away. 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, together we can get things figured out.**

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 the Orientation Module by 11:59 pm on Sunday, February 5.** I will reach out to you in case you forget to participate.

Cuyamaca College Throughout the Semester

Assignments will be due weekly (typically on Sundays and Wednesdays) on Canvas. To avoid being dropped, it is important for you to **attend class sessions** and **log in to complete work on Canvas regularly**. If you do not make progress for four or more consecutive days or miss class for two consecutive days, I'll send out a "Wellness-Check" email to see how life is treating you and if you can re-engage with the course. Remember that you do not need to wait for me to contact you, I want to know how you are doing and if you are having trouble so you can get the support you need.

Grading & Feedback

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 on Zoom and within 3-days after the first draft of a peer-review assignment is due. The goal is to use these comments to improve and correct your work especially for first draft before I officially grade the assignment (your final draft).
- 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 peer-reviews and 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
- <u>How to View Annotation Comments</u> (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 peer-reviewed assignments.

- Peer Reviewed Assignments. Grades for peer-review assignments are based on effort and completion of three tasks, not on the accuracy of your first draft. These assignments are extensions/applications of the reading that allow you to put course concepts and any findings into your own words. Below are the four main tasks, but directions describing this and how to do this in Canvas will be provided in the assignment.
 - 1. Review the Rubric
 - 2. Submit your first draft.
 - 3. Complete your assigned peer reviews.
 - 4. Submit your corrected work (final draft) with a Self-Evaluation.
- **Computer Based Assignments.** You will have unlimited attempts for each question related to MyOpenMath embed material, and 3-attempts for each Canvas quiz. 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 as well as improve your score on future attempts. **Only your highest score will count towards your grade.**

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."

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, 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 it. 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 challenge. 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, have mistakes on the work, and some are not allowed on many assignments. 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 assignment. If this happens again or becomes a pattern, I am concerned that this behavior is jeopardizing your future success. The Dean of Academic Affairs has access to resources and will be able to better guide you going forward.

College Catalog Description – MATHEMATICS 176 (6 units)

Pre-Calculus: Functions and Graphs

Preparation for calculus: polynomial, absolute value, radical, rational, exponential, logarithmic, and trigonometric functions and their graphs; analytic geometry, polar coordinates. Successful completion of MATH 176 is equivalent to the successful completion of MATH 170 and 175. Maximum of 7 units can be earned for successfully completing any combination of MATH 170, 175, 176.

Prerequisite for Math 176 - "C" grade or higher or "Pass" in Math 110 or appropriate placement

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

- 1. Interpret graphical information, such as identifying types of functions, translations, inverses, intercepts, and asymptotes.
- 2. Solve inequalities and a variety of symbolic equations involving algebraic and transcendental functions.
- 3. Construct appropriate models for real world problems, such as fitting an algebraic function model to a set of data, and system of linear equations.

College Catalog Description – MATHEMATICS 076 (2 units)

Foundations for Pre-Calculus

Student Learning Outcomes

Support for this course focuses on the skills and concepts needed for success in Pre-Calculus. This course is for students concurrently enrolled in Pre-Calculus (Math 176) at Cuyamaca College. Students will receive extra support in algebra,

geometry, problem solving, technology, and study skills. Pass/No Pass only. Non-degree applicable.

Prerequisite for Math 076 – appropriate placement

Co-requisite for Math 076 - Math 176

Student Learning Outcomes

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

- 1. Solve multi-disciplinary application problems and interpret the results in context.
- 2. Demonstrate relevant arithmetic, algebra, and technology skills in the context of Pre-Calculus.
- 3. Apply study habits that promote success in PreCalculus.

Tentative Course Calendar

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

Week 1 (1/30 - 2/05): Introductions, Modules 1.1, 1.2 Prep, 1.2, 1.3 Prep, 1.3

Week 2 (2/06 - 2/12): Modules 1.4, 1.5, 1.6

Week 3 (2/13 – 2/19): Modules 1.7, Unit 2 Prep, 2.1 Prep, 2.1, 2.2

Week 4 (2/20 - 2/26): Modules 2.3, 3.1, Gear Up 3.2, 3.2, President's Day

Week 5 (2/27 - 3/05): Modules 3.3, 3.4, 3.5

Week 6 (3/06 - 3/12): Modules 3.6, 3.7, 3.8

Week 7 (3/13 – 3/19): Modules Gear Up 4.1, 4.1, 4.2

Week 8 (3/20 - 3/26): Modules Gear Up 4.3, 4.3, 4.4, 4.5

Spring Break (3/27 - 4/02): No classes this week!

Week 9 (4/03 - 4/09): Modules 4.6, Gear Up 5.1, 5.1, 5.2, 5.3

Week 10 (4/10 - 4/16): Modules 5.4, Gear Up 5.5, 5.5, 5.6, 5.7, 6.1

Week 11 (4/17 - 4/23): Modules 6.2, 6.3, 6.4, 6.5

Week 12 (4/24 - 4/30): Modules 7.1, 7.2, 7.3, 7.4

Week 13 (5/01 – 5/07): Modules 7.5, 7.6, 7.7

Week 14 (5/08 – 5/14): Modules 7.8, 7.9, 7.10

Week 15 (5/15 – 5/21): Modules 8.1, 8.2, 8.3

Week 16 (5/22 - 5/28): Modules 9.1, 9.2, 9.3

Finals Week (5/30 - 6/05): Final Exam Day is Wednesday, May 31, 10:30 am to 12:30 pm

Important Dates to Keep Track Of

Warning: Below you can see that the college has set Sunday February 12th as the last day a student can add this course. However, I will not add students after Thursday, February 2nd.

 February 12, Sunday Last day to add classes Last day to apply for a refund and to drop without receiving a "W" (Withday - (Presidents' Weekend) No classes on Friday, Saturday, & Mond March 10, Friday Last day to apply for Spring 2023 Degree/Certificate 	
 Last day to apply for a refund and to drop without receiving a "W" (Withd February 17, 18, 20 March 10, Friday Last day to apply for Spring 2023 Degree/Certificate 	
 February 17, 18, 20 March 10, Friday Holiday – (Presidents' Weekend) No classes on Friday, Saturday, & Mond Last day to apply for Spring 2023 Degree/Certificate 	awal).
• March 10, Friday Last day to apply for Spring 2023 Degree/Certificate	iy!
• March 27 – April 1 Holiday – (Spring Break) No classes this week!	
• April 30, Sunday Last day to drop with a "W" (Withdrawal) from semester length classes	
 May 25, Thursday Last day of Class 	
• May 29, Monday Holiday – (Memorial Day) No classes on Monday!	
 May 31, Wednesday Final Exam Part 1; in-class 10:30 am – 12:30 pm; H-113 	
Last day to apply for P/NP (Pass/No Pass)	
 June 2, Friday Final Exam Part 2; due on Canvas by midnight 	
 June 8, Thursday Instructor Grade Deadline 	

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