

Math 1030 College Algebra

Instructor:

Office:

Student Hours:

Instructor Email:

Course Schedule:

Course Location:

Course Overview

An intensive study of algebraic functions, equations, and inequalities required for calculus. Emphasis on underlying algebraic structure and development of algebraic skills. The study includes: polynomial, rational, radical, absolute value, exponential, and logarithmic functions. This course covers the same material as MATH 1040, but it also includes supplemental instruction for students needing additional support.

Academic Honesty and use of technology

The goal of this course is that you learn to use mathematical strategies and methods by hand. Therefore, it is unacceptable on exams to use anything that can simplify, solve, graph, or otherwise do the problem for you. The list of forbidden resources includes, but is not limited to:

- Chegg
- Mathway
- Wolfram Alpha
- Desmos graphing calculator
- Symbolab
- ChatGPT
- Any handheld calculator which can solve, simplify, or graph
- Smart watches
- Smart glasses

Scientific calculators are sometimes allowed; you will know that the use of a scientific is acceptable if one is included in the homework or test question. Otherwise, you should do calculations by hand.

I understand that sometimes as a part of the studying process, students may rely on these materials to check their work. Beware, though; it can be easy to become dependent on these resources, and then the temptation to use them on exams can overwhelm. I advise you to never use these resources. Instead, make use of the ability to reach out to me with your questions, use the Math Center to access tutoring and support services, and participate in PASS meetings.

All forms of cheating are grounds for an immediate F in the course for all parties involved; the minimum penalty will be a 0 on the affected assignment.

Important Dates

Aug 25: Classes Begin

Aug 31: Last Day to Add Full Semester Length Classes in Portal Without Instructor Approval

Sep 02: Waitlist Deleted

Sep 11: [Census Date](#)

Oct 31: Last Day to Withdraw in Portal without Instructor and Dean Approval

Nov 24-30: Fall Break (no classes)

Dec 15-18: Finals Week

Grading

Attendance/Participation/Class Activities: 5%

Homework/Quizzes: 15%

Exams (3): 55%

Final Exam: 25%

I will work with you throughout the semester to offer as much support as I can to help you earn the grade you're aiming for, but please note that **I do not offer last-minute extra credit; nor do I round final grades.**

Course Objectives

Students will be able to:

1. Analyze the features of functions from tables, formulas, and graphs, including...
 - a. Identifying functions
 - b. Function values
 - c. Solving functions
 - d. Finding intercepts
 - e. Intervals of increasing and decreasing
 - f. Concavity
 - g. End behavior
 - h. Asymptotic behavior
 - i. Compositions of functions
 - j. Inverses of functions

2. Given linear, quadratic, polynomial, rational, root, exponential, and logarithmic functions and equations...
 - a. Graph functions using a variety of strategies, including transformations.
 - b. Solve equations.
 - c. Solve inequalities.
 - d. Find inverse functions.
3. Use functions and their features to solve real-world problems.

Class Responsibilities and Participation

We will be covering most of chapters 1-3 in [UCCS College Algebra](#) part of chapter 7 in [Free College Algebra 2e with Corequisite Support - OpenStax](#). There are many variations of the types of problems that you may see in a college math class; it would be impossible to cover every variation. Therefore, while doing homework or quizzes, don't panic if you see a type of problem that is new or different to you. Trust that if a problem is on the homework, you have the tools to solve it! Try everything, apply your algebra knowledge, and review tricky problems several times before each exam. Learning mathematics is like learning a sport or an instrument: it takes a lot of intentional practice to get good at it!

We will often have activities and small quizzes in class. These give you an opportunity to practice new skills and get immediate feedback on how you're doing, and they allow me to assess how the class as a whole is progressing. They are worth participation credit, so you simply need to be present and try your best to get some credit to boost your grade.

Attendance

Attendance and participation are vital to your success in this course, and are therefore included in your course grade. Be on time, and be ready to work.

Sometimes life happens, and you may be unable to attend class. You are still responsible for learning any content from days that you miss class. I may offer you an opportunity to still gain your participation credit if you reach out to me and work with me. To possibly earn credit for missed days, do the following:

1. Contact me to notify me of your absence as soon as possible.
2. Make a plan for meeting with me to review the notes and activities for the day(s) you missed (during office hours or by appointment).

Homework

Homework will be mostly completed online in Canvas. Occasionally, we'll have some written assignments as well, which you will take a picture of and upload to the assignment. Homework will be assigned every day and will be due at 11:59 pm on Tuesdays and Fridays, unless otherwise specified.

The online homework system will grant you a total of 5 late passes for the semester; these late passes extend the due date by 48 hours. You do not get additional late passes.

Homework is a crucial chance for you to practice the skills that you need to master in order to pass this course. Keep in mind, to do well in class, it's not enough to get the right answer—you must also understand *how* and *why* the answer is correct. **You will get immediate feedback about whether your answer is correct, and you will have the opportunity to reattempt the problem up to 10 times. This feedback allows you to make sure that you are fully understanding the content *while you are completing the homework*; students who embrace this opportunity to perfect their mathematical skills tend to do the best on the following exams.**

Disability Accommodations

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to register with Disability Services and provide them with documentation of your disability. They will work with you to determine what accommodations are appropriate for your situation. To avoid any delay, you should contact Disability Services as soon as possible. Please note that accommodations are not retroactive and disability accommodations cannot be provided until a Faculty Accommodation Letter has been given to me. Please contact Disability Services for more information about receiving accommodations at Main Hall room 105, 719-255-3354 or dservice@uccs.edu.

Excel Math Center

The Math Center, in ENG 233, is a study space for all students, whether you need a little help, a lot of help, or none at all. They have a staff of tutors who have taken at least through Calculus 3, and who have been trained to work with students one on one. The Math Center is available for you to work on homework, study for exams, review concepts from previous classes, or just check your homework answers.

You can find the schedule of tutors, and a lot more information about the center at the Math Center's webpage: [Math Excel Center website](#).

Peer Assisted Study Sessions

A Peer Assisted Study Session (PASS) component is provided in this course for all students who want to improve their understanding of the material. PASS sessions will be held in-person and on Microsoft Teams and are led by a student who has already taken the course and has been trained to facilitate group sessions where students can meet to compare class notes, review and discuss important concepts, develop strategies for studying, and prepare for exams. Attendance at PASS sessions is free and voluntary. Students may attend as many times as they choose. PASS sessions begin the first or second week of class and continue throughout the semester. A session schedule and room locations will be announced in class. For information about the program and session schedule/updates, visit the Math Center's webpage: [Math Excel Center website](#).

Quantitative Literacy Competency

Competency in quantitative literacy represents a student's ability to use quantifiable information and mathematical analysis to make connections and draw conclusions. Students with strong quantitative literacy skills understand and can create sophisticated arguments supported by quantitative evidence and can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc.).

Students should be able to:

1. **Interpret Information**

1. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).

2. **Represent Information**

1. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).

3. **Perform Calculations**

1. Solve problems or equations at the appropriate course level.
2. Use appropriate mathematical notation.
3. Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.

4. **Apply and Analyze Information**

1. Make use of graphical objects (such as graphs of equations in two or three variables, histograms, scatterplots of bivariate data, geometrical figures, etc.) to supplement a solution to a typical problem at the appropriate level.
2. Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.
3. Make judgments based on mathematical analysis appropriate to the course level.

5. **Communicate Using Mathematical Forms**

1. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication).

Compass Curriculum

This course is part of the Compass Curriculum. The Compass Curriculum is the signature undergraduate education program at UCCS for all majors and all colleges. This program endeavors to provide you with the tools for professional and personal success that you will need when you graduate. The program

includes skills that employers say that they want students to have from their education (critical thinking, oral and written communication, ethics, innovation, problem-solving, understanding inclusiveness, and sustainability).

Quantitative Reasoning courses help students learn:

- How to construct a logical argument based on the rules of inference.
- Analyze and interpret numerical data.
- How to apply mathematical methods to solve problems in university work and daily life.

Essential Learning Outcomes:

- Gather, critically analyze and evaluate quantitative information within relevant disciplinary contexts.
- Demonstrate the core ethical principles and responsible methods of your discipline.

Guaranteed Transfer Pathways

The Colorado Commission on Higher Education has approved Math 1040-College Algebra for inclusion in the Guaranteed Transfer (GT) Pathways program in the GT-MA1 category. For transferring students, successful completion with a minimum C- grade guarantees transfer and application of credit in this GT Pathways category. For more information on the GT Pathways program, go to <http://highered.colorado.gov/Academics/Transfers/gtPathways/curriculum.html>.

As a GT Pathways course, this course should provide students with the opportunity to / Students should be able to:

1. Demonstrate good problem-solving habits, including:
 - Estimating solutions and recognizing unreasonable results.
 - Considering a variety of approaches to a given problem, and selecting one that is appropriate.
 - Interpreting solutions correctly.
2. Generate and interpret symbolic, graphical, numerical, and verbal (written or oral) representations of mathematical ideas.
3. Communicate mathematical ideas in written and/or oral form using appropriate mathematical language, notation, and style.
4. Apply mathematical concepts, procedures, and techniques appropriate to the course.
5. Recognize and apply patterns or mathematical structure.
6. Utilize and integrate appropriate technology.