College Algebra (QL)

MATH1050 004

READ:

Welcome to College Algebra! This syllabus has a lot of information. Please take time to read through it and re-read relevant parts when questions about the course arise later. This will help you be familiar with the course. Ask your instructor questions you have that are not directly addressed in the syllabus; frequent communication with your instructor is highly recommended. Ignorance regarding information in the syllabus, the course's due dates, assignments, exams, etc., is not accepted nor excused. Be aware and be prepared. Work well and work hard. If you do, then you will learn a lot in this course, and consequently, you will develop mathematically and intellectually, which is part of its many purposes. Have a great semester!

Course Description

Course Description: This course explores a variety of algebra topics, though in a more thorough and in-depth way than an intermediate-level algebra course. Topics include: Functions and graphing, including polynomial, rational, exponential, and logarithmic, systems of equations, matrices, inverse matrices, and determinants, partial fractional decomposition, conic sections, sequences and series, and the binomial theorem.

Pre-Requisite(s): Within the last year, MATH 1010 must have been taken with at least a C grade, or appropriate placement. Also, a passing grade in ENGL 0990 is required unless the student tests directly into ENGL 1010.
Semester: All

Course Student Learning Outcomes

- Perform transformations and arithmetic operations on known functions to create new functions and their graphs.
- Construct mathematical models (functions) from real-world problems.
- Analyze and construct graphs of polynomial, rational, exponential, and logarithmic functions.
- Solve polynomial and rational inequalities by factoring.
- Find the real and complex zeros of polynomial functions using the rational zero theorem and synthetic division, along with the remainder theorem and the factor theorem.
- Graph and algebraically solve for the inverse of a one-one function.
- Solve exponential and logarithmic equations.
- Apply properties of exponential and logarithmic functions to model and solve real-world problems, including compound interest half-life problems.
- Graph and construct equations of conic sections, i.e., parabolas, circles, ellipses, and hyperbolas.
- Solve real-world problems involving conic sections.
- Perform arithmetic operations on matrices.
- Set up and solve linear systems of equations using matrix methods, including row operations, Cramer's Rule, and inverse matrices.
- Find the partial fractional decomposition of a rational expression.
- Analyze sequences and series and understand recursive formulas and summation notation to find the sum of arithmetic and geometric series.
- Apply sequences and series to solve real-world problems.
- Expand powers of binomials using the binomial theorem and Pascal’s triangle.
- Students will express concepts, ideas, and problem-solving techniques using correct mathematical notation and language.
- Students will demonstrate correct use of mathematical theory and apply logical thinking that leads to an understanding of mathematical proofs.
- Students will organize, present, and explain solutions to problems involving real-world applications in writing and/or oral presentations, and will have necessary algebraic knowledge and skills to succeed in a first semester calculus course.

Required Text

College Algebra, Version 2. This is a free OER text that is available in your Canvas course. Hard copies are usually for sale in the bookstore.

For more information on text accessibility, contact Accessibility & Disability Services at ads@slcc.edu.

Course Prerequisites

This course is for students who have successfully completed an intermediate algebra course, such as MATH 1010, with a grade of at least C or better (preferably, a B or better), or who otherwise qualify by virtue of acceptable CPT or ACT scores achieved within the past year. Substitutions for the intermediate algebra course include an ACT score of 23 or better, or a CPT score of at least 55 on the college algebra section. If you do not have documentation for one of these prerequisites, you are highly advised to enroll in a math class more appropriate for your background; failure to do so could result in an unpleasant experience.

Communication Plan

I will respond to email within 24 hours on weekdays

I will offer feedback on major assignments within 1 week.

The best way to contact me is via the Canvas Inbox, as I will prioritize this email over other modes of communication.

Math 1050's Calculator Rule

Programmable calculators, graphing calculators, and any calculators capable of algebraic manipulations, are not allowed on in-class quizzes, regular exams, or the final

exam.

Prohibited calculators include all the various makes of the following base models: TI36, TI83, TI84, TI86, TI89, TI92, TI-Nspire, HP48, as well as other similar models and brands. An example of an acceptable standard, scientific, non-graphing calculator is the TI30, which is relatively inexpensive. Your instructor can verify if a calculator is acceptable for use during quizzes or exams. How to use graphing software or how to program will not be taught in Math 1050, but it will also not be assessed.

Occasionally, a standard scientific calculator, say, a TI30, is required for basic approximation of radicals, logarithmic expressions, and the like, even on exams, like the final exam. It is advised that students always have a basic calculator with them for quizzes and exams just in case that one is allowed or needed. Note that it is the instructor's prerogative to give quizzes, tests, or portions of tests that do not allow any calculator. Not having a calculator does not excuse a student from being responsible for taking a quiz or exam at the assigned time or completing problems.

Students are expected to be able to perform basic calculations such as fractional arithmetic, finding exact simplified root values, manipulating algebraic expressions at the course level, etc., without a calculator. While a few homework problems and applications may require the use of a graphing calculator or online app, e.g., Desmos, questions on in-person quizzes or exams will only test basic facts that must be demonstrated by students without aid beyond blank scratch paper and a standard, scientific, non-graphing calculator. A student’s performance will be measured primarily on their understanding of the concepts and their competency in performing symbolic operations rather than a mere ability to use technology (pushing buttons) to get answers. Full credit will only be awarded on exam questions when answers are justified by a legible and valid argument.

General Education Information

QL: Quantitative Literacy

General Education ePortfolio Syllabus Statement. Each student in General Education courses at
SLCC maintains a General Education ePortfolio. Instructors in every Gen Ed course will ask you to
put at least one assignment from the course into your ePortfolio and accompany it with

reflective
writing. It is a requirement in this class for you to add to your ePortfolio, and this syllabus details
the assignments and reflections you are to include. Your ePortfolio will allow you to include your
educational goals, describe your extracurricular activities, and post your resume. When you finish
your time at SLCC, your ePortfolio will then be a multi-media showcase of your educational
experience. For detailed information visit: https://www.slcc.edu/eportfolio
Starting Fall 2016, all students new to SLCC will use Digication as their ePortfolio platform. Any
students who have created ePortfolios prior to Fall 2016 on other platforms will be allowed to
continue using those platforms. You only need to create one ePortfolio for all your General
Education courses. For Digication tutorials to get started, please go to:
https://slcc.digication.com/slccnewdigicationhelpsite/beginning-tutorials

Student Conduct

Students are expected to follow the SLCC Student Code of Conduct at Student Code of Conduct.

Classroom Deportment: Each student is responsible for their own behavior. Any student who shows a pattern of disrespect for others, or who at any time displays egregious disrespect for others, will be subject to penalties as per the student code of conduct.

Attendance: Class attendance and/or participation, whether in-person, broadcast, or online, are expected. They are typically essential to achieve satisfactory results. It is the student's responsibility to be aware of all material covered, in-class announcements, tests dates, assignment due dates, etc.

Electronic Devices in the Classroom: Absolutely no video or audio recording in the classroom is allowed without prior written authorization from the instructor. Cell phones and other electronic devices should be in silence mode during classes, tests, and final exams. Moreover, such devices should not be on desks during lectures, tests, and the final exam unless they are part of the class' participation activities.

Cell phones and tech in-class: In case of emergency, or otherwise, students should exit the classroom before they e-mail, text, or use their cell phones. If students choose to use a computer or electronic device in class to take notes, they may do so without distracting their classmates. Computer activities that are not directly related to the class should not be done in-class, e.g., watching YouTube or the like. Students who text, scroll on their phones, talk on their cell phone, or use their computers to do activities not directly related to the class will be asked to leave the classroom.

Math 1050's Cheating Rule: Cheating on any Math 1050 assignment or exam will minimally result in a failing grade of 0% for that assignment without any possibility for that work to be made up, resubmitted, or for the failing grade to be substituted by any other work's grade. Moreover, cheating on a single assignment or exam can result in a failing grade for the entire class; this is typically the prerogative of the individual instructor. Cheating is not tolerated, so, take heed and do honest work to learn and develop intellectually. For more details about academic dishonesty, consult the Student Code of Conduct, where this topic is addressed in section C (see below too):

Policies and Student Affairs.

Sanctions for Academic Misconduct (taken from the Student Code of Conduct): Faculty, program directors, associate deans, deans, and the provost for Academic Affairs are authorized to impose any one or a combination of the following sanctions after finding a student responsible for acts of academic misconduct. The possible sanctions include, but are not limited to

- verbal warning and reprimand,
- restriction of privileges, such as access to lab facilities, library facilities, or testing centers,

- failure of the exam, quiz, project, or other assessment,
- failure for the course,
- withdrawal from the course, or
- withdrawal from the academic program.

Upon the circumstance of catching a student cheating, even if the infraction seems minor or the student is remorseful, instructors are expected to fill out the following form (the Dean of Students uses these forms to establish patterns of behavior):

Academic Misconduct Violation Reporting Form.

How to Navigate to Canvas

Brief Description of Assignments/Exams

HOMEWORK (15%): Further details of how and when to submit homework, and other due dates, will be discussed in class and/or posted in Canvas. Ask your instructor if you have questions! However, generally each section has an online homework assignment accessed and submitted via Canvas. The homework is due weekly (Sunday by 11:59 pm).

You are expected to work homework exercises from each section that we cover by roughly the next class meeting. Please keep current on your homework and ask questions about the homework when/if needed. It is very easy to feel overwhelmed if one gets too far behind. Don't allow that to happen! Be and remain diligent.

Of course, regular and often intense practice is essential for learning and retaining mathematics, like learning any demanding subject. You should be prepared to spend at least two hours studying outside of the class for each hour of class. However, many students find that much more time is required to perform as well as they desire on exams. You are encouraged to work more exercises than those assigned, say, from the text, for extra practice. Do what you must do to perform at levels that you desire, whatever it takes. Your honest, hard work and performance is what matters here.

Education constitutes an investment in yourself; invest all that you can. One cannot buy, borrow, steal, or cheat intellectual development. One must earn it and it takes serious time and effort.

QUIZZES (7%): Quizzes are given frequently, sometimes with notice and sometimes as pop quizzes. These should be used by students to gauge their current understanding as preparation for tests. Generally, they will be given in class on paper. As a result, if a student is not in class on a quiz day, he/she must come during CHARGER time or after school to make it up an alternate version before the unit test.

ATTENDANCE/PARTICIPATION/CLASS WORK (8%): Attendance will be taken each class period and work will be done in class that will count toward this category of the gradebook. I hope you will make it a priority to attend class regularly!

PROJECT(S)/e-PORTFOLIO (5%): This signature assignment is designed to allow students to examine applications of mathematics that arise in our daily lives. The project can be found in Canvas. Parts of the projects may require you to use technology as a tool, e.g., calculator or app. You may work on the projects in groups of approximately 2 to 4 students, but you may also choose to work on your own. You are encouraged to share ideas and collaborate in whatever ways that you find effective. However, each student must turn in a complete copy of each assigned project, and the reflective writing statement must be each student's original work. Note: At least one of these projects must be uploaded to your e-Portfolio as your signature assignment along with its reflective writing according to the due date set by your instructor.

MIDTERM EXAMS (35%): There will be three regular exams on the dates indicated below during class time, and a comprehensive final exam. No notes, note cards, texts, any collaboration, internet devices, which includes cell phones, or external aid of any kind are permitted on any exam. Scratch paper and a standard scientific calculator are allowed, e.g., a TI30, but no graphing, no programmable, and no calculators cable of

algebraic manipulation are permitted; see the calculator rule below. No sample exams will be given to students by the instructor for any regular exams (this is departmental rule). The dates and times of the regular exams are:

EXAM 1 (Chpt. 1-2):

EXAM 2 (Chpt. 3-4):

EXAM 3 (Chpt. 5-6):

NOTE: All exams, regular exams and the final exam, must be taken in-person, no exceptions.

Math 1050's In-Person Testing Disclaimer: Any student not willing or not able to comply with in-person testing in their classroom, or at an SLCC's Testing Center, should not register, or remain registered, for Math 1050. Students should make arrangements early with employers, etc. to be free during scheduled exams. Missing an exam for work is not excused as students are aware of the exam dates the first day of classes.

THE FINAL EXAM (30%): There is a mandatory, departmental, comprehensive, final exam. Its format will be paper, and pen-or-pencil, with 20 – 30 mandatory, show-your-work problems, no multiple choices. Students will show/write their work for each problem and all final exams will be graded according to the work shown; partial credit is possible for relevant, partially correct work. Final exams are not given early (plan now) and the final exam may only be taken once a semester. All students must take the final exam to pass the class.

No note cards, notes, texts, collaboration, internet devices, programming/graphing calculators, or external aid of any kind are allowed. Scratch paper and a standard scientific, non-graphing calculator are allowed, e.g., TI30 but not TI36. However, all exam work to be graded must be written on the exams' pages itself, so all work written on scratch paper to be graded must be rewritten on the final exam's pages themselves. Final exams can only be taken once a semester. There are no final exam retakes and no final exam corrections of any kind can be submitted for points.

Grading Scale

Assignment	Percent of Grade

In Term Exams (3)	35%
Final Exam	30%
Online Homework	15%
Attendance/Participation/Class Work	8%
Signature Assignment	5%
Quizzes	7%

60% Final Exam Rule: The Math Department's 60% Final Exam Rule is that if a student scores less than
60% on their final exam then their total course grade will be the lower of a D or their grade as calculated
according to the weights of the grading categories on their syllabus. In other words, if a student fails their
final exam (scores less than 60%), then the highest total course grade that they can earn for the course is a
D.
This is an important departmental rule, which must be enforced to help ensure the success of students taking
courses that have Math 1050 as a prerequisite. Rules such as this also help make, "seamless," transfers to
other USHE institutions possible. Without such rules, your Math 1050 credit might not transfer to other
higher ed institutions!

Grade	Min.	Grade	Min.	Grade	Min.	Grade	Min.	Grade	Range
		B+	87%	C+	77%	D+	67%		
A	94%	B	83%	C	73%	D	63%	E	Below 60%
A-	90%	B-	80%	C-	70%	D-	60%		

Late Work Rule

- **Homework**

Because time management is challenging, deadlines might not be met. But you're in luck. I'm on your side. For flexibility, online homework exercises for the week aren't due until the following Monday night at 11:59pm. After that date, they will be open for practice, but not to be worked on for points.

I will also drop the 3 lowest homework assignment scores.

- **Projects and written work**

  It is important to submit work on time. There is a very high correlation between frequent engagement with the material and success in online math courses. I will also be providing feedback on a regular basis. Projects and written work submitted late will be accepted with a penalty. Assignments submitted after the deadline may receive up to a 5% grade deduction for each day following the due date and time. If you are worried about turning assignments in on time then feel free to work ahead!

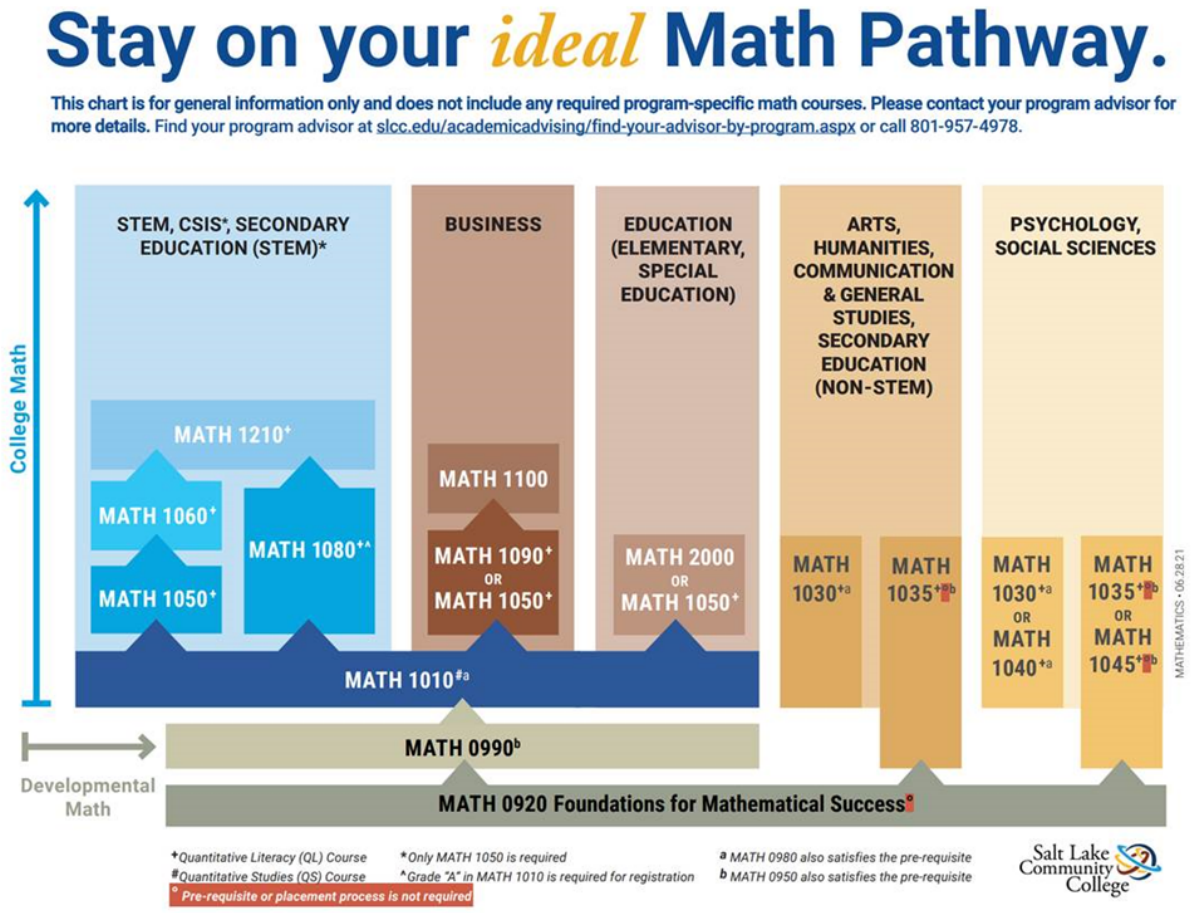
  If you recognize a due date might be a problem, email me in advance. Remember, I want to help you succeed.

- **Exams, Quizzes and Final Exam**

  Quizzes and exams may not be turned in late. This is to ensure that the class keeps moving forward. However, if there is a problem, you are ill or an have an emergency that prevents you from meeting the deadline, you must contact me prior to the exam or quiz close date for approval. If the request is made late or if the reason doesn't qualify for an exception, I reserve the right to give you a 0 for the exam or module quiz. Again, my policy is that you may not complete module quizzes or exams late.

  I will, however drop your lowest quiz score and replace your lowest exam score with your final exam score, given that it is higher.

SLCC Math Pathways



http://www.slcc.edu/placement/dt/math/pathway.aspx

Contingency Remote Workday/Learning Plan

Under Utah legislation, the governor can now call a "Remote Workday" given certain circumstances. These remote workdays can be due to inclement weather, pollution, or natural disasters.

1. Each math instructor (full or part-time) will **check-in/communicate** with the Math AD, say, with an email that acknowledges the remote workday and their relative plan for it.
2. The Math AD will verify whether a class will still meet on a campus if something happens at the campus, etc.
3. Each instructor will make a **Canvas class announcement and communicate with students**, informing them of the remote learning day and what their relative

plan is for the day's class. Announcements will include pertinent info for the remote day and/or any adjustments to the next class:

- What are the assigned readings, video lectures to watch, practice problems to work?
- Is the instructor holding a Zoom meeting in lieu of the in-person class? The Zoom meeting must be optional and should be conducted at the same time as the regularly scheduled class, if possible. Moving to livestream modality is only an option, not required of the instructor or students. The Zoom meeting could simply be to answer student questions.
- Any test that was scheduled on a remote learning day will be postponed, either to the next class or possibly later scheduled through the Testing Center. Instructors will let students know that the exam has been postponed in their Canvas announcement.

Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

You can access the document by clicking on the following link:
https://slcc.instructure.com/courses/530981/pages/institutional-syllabus

General Learning Support & Tutoring Services

General Learning Support & Tutoring Services provide support for SLCC students enrolled in any class at the College. You may also ask your instructor about discipline-specific learning support and tutoring services. The following resources are provided free-of-charge.

- In your Canvas course, there is a (blue) tab, “Online Tutoring,” in the left column of tabs. This literally provides free online tutoring during hours of operation.
- For in-person Redwood campus help in math, the next resource is highly recommended: **STEM Center** in SI building, which offers free STEM tutoring.

STEM Center Hours (may vary by semester): Monday-Thursday, 10:00 a.m.-9:00 p.m. Friday and Saturday, 10:00 a.m.-5:00 p.m.

Tutoring: This is an index of tutoring resources.

STEM Learning Centers: Provides free assistance in Math, Science, Accounting, CSIS and Allied Health Classes at 6 campus locations.

Student Writing Center: Provides in-person and online feedback on all writing assignments.

Library Services: Provides research help, print and online resources, computers and study space.

ePortfolio Lab: Provides drop-in assistance for all ePortfolio questions.

eLearning Support: Provides support for navigating online and hybrid classes.

Accessibility and Disability Services: If you have a disability and want an accommodation, please contact:

 Phone: 801-957-4659

 Email: ADS@slcc.edu

 Website: ADS

Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or

want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, please visit the Institutional Syllabus under the Tutoring and Learning Support tab: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, please visit the Institutional Syllabus under the Advising and Counseling Support Services tab: https://slcc.instructure.com/courses/530981/pages/institutional-syllabus. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

SLCC Student Academic Calendar

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points
	Chapter 1 Homework Questions Forum	Discussion	0
	Chapter 2 Homework Questions Forum	Discussion	0

Due Date	Assignment Name	Assignment Type	Points
	Chapter 3 Homework Questions Forum	Discussion	0
	Chapter 4 Homework Questions Forum	Discussion	0
	Chapter 5 Homework Questions Forum	Discussion	0
	Chapter 6 Homework Questions Forum	Discussion	0
	Chapter 7 Homework Questions Forum	Discussion	0
	Introduce Yourself	Discussion	0
	Roll Call Attendance	Assignment	100
8/21	College Algebra Pre-Test	Assignment	100
9/3	Online HW 1.1: Introduction to Functions	Assignment	100
9/3	Online HW 1.2: Graphs of Functions	Assignment	100
9/3	Online HW 1.3: Transformations of Functions	Assignment	100
9/8	Online HW 1.4: Combinations of Functions	Assignment	100
9/15	Online HW 2.1: Quadratic Functions	Assignment	100

Due Date	Assignment Name	Assignment Type	Points
9/15	Online HW 2.2: Graphs of Polynomials	Assignment	100
9/15	Chapter 1 Quiz	Quiz	10
9/15	Online HW 1.5: Inverse Functions	Assignment	100
9/22	Chapter 2 Quiz	Quiz	10
9/22	Online HW 2.4: Real Zeros of Polynomials	Assignment	100
9/22	Online HW 2.5: Complex Zeros of Polynomials	Assignment	100
9/22	Online HW 2.6: Polynomial Inequalities	Assignment	100
9/22	Online HW 2.3: Using Synthetic Division to Factor Polynomials	Assignment	100
9/23	Exam 1	Assignment	50
9/23	In-Class Problems Chapters 1-2	Assignment	20
9/29	Online HW 3.1: Introduction to Rational Functions	Assignment	100
9/29	Online HW 3.2: Graphing Rational Functions	Assignment	100
10/6	Chapter 3 Quiz	Quiz	10

Due Date	Assignment Name	Assignment Type	Points
10/6	Online HW 3.3 More with Graphing Rational Functions	Assignment	100
10/6	Online HW 3.4: Solving Rational Equations and Inequalities	Assignment	100
10/6	Online HW 4.1: Introduction to Exponential and Logarithmic Functions	Assignment	100
10/13	Chapter 4 Quiz	Quiz	10
10/13	Online HW 4.3: Exponential Equations and Functions	Assignment	100
10/13	Online HW 4.4: Logarithmic Equations and Inequalities	Assignment	100
10/13	Online HW 4.5: Applications of Exponential and Logarithmic Functions	Assignment	100
10/13	Online HW 4.2: Properties of Logarithms	Assignment	100
10/14	Exam 2	Assignment	92
10/14	In-Class Problems Chapters 3-4	Assignment	20

Due Date	Assignment Name	Assignment Type	Points
10/20	Online HW 5.2: Circles	Assignment	100
10/20	Online HW 5.3: Parabolas	Assignment	100
10/27	Chapter 5 Quiz	Quiz	10
10/27	Online HW 5.4: Ellipses	Assignment	100
10/27	Online HW 5.5: Hyperbolas	Assignment	100
10/27	Online HW 6.2 Systems of Linear Equations and Applications	Assignment	100
11/3	Online HW 6.3: Systems of Linear Equations: Augmented Matrices	Assignment	100
11/3	Online HW 6.4: Matrix Arithmetic	Assignment	100
11/3	Online HW 6.5: Systems of Linear Equations: Matrix Inverses	Assignment	100
11/3	Credit Card Debt Assignment	Assignment	50
11/10	ePortfolio Assignment	Assignment	50

Due Date	Assignment Name	Assignment Type	Points
11/10	Online HW 6.6: Systems of Linear Equations: Determinants	Assignment	100
11/17	Chapter 6 Quiz	Quiz	10
11/17	Online HW 6.7: Partial Fraction Decomposition	Assignment	100
11/18	Exam 3	Assignment	72
11/18	In-Class Problems Chapters 5-6	Assignment	20
11/24	Online HW 7.1: Sequences	Assignment	100
11/24	Online HW 7.2 Series	Assignment	100
12/8	Chapter 7 Quiz	Quiz	10
12/8	Final Exam	Assignment	176
12/8	Online HW 7.3: Binomial Expansion	Assignment	100