

Math 1050-007 : College Algebra, Fall 2017

Time and Location	MWF 11:50 AM - 1:10 PM, M Li (Marriott Library) 1130.
Instructor	Sam Carroll
Contact	Office : LCB 202. Email : carroll@math.utah.edu Office Hours : TBD.
Other Contacts	Course coordinator: Maggie Cummings (cummings@math.utah.edu)
Course Website	Canvas will be used regularly for this course. I will regularly post announcements in Canvas and will hold you accountable for receiving that information. If you do not check Canvas regularly, you should have announcements forwarded to an email address that you do check regularly. Either sign in through CIS or go to https://utah.instructure.com/courses/453312 .
Textbook	Precalculus, 9th edition, 2013 Larson. The University of Utah has negotiated special pricing for the text and WebAssign. <ul style="list-style-type: none">• You must purchase the online version of the text with Enhanced Webassign, this costs \$75 and it covers both Math 1050 and Math 1060.• Additionally, you may also purchase a loose-leaf version of the text for an extra \$40. The text may be purchased at http://www.cengagebrain.com/course/2233827. This link can be found in Canvas as well, under Module/WebAssign Information/Purchase Textbook.
Prerequisites	At least a C grade or better in Math1010 (Intermediate Algebra) OR Math1060 (Trigonometry) OR Math1080 (Precalculus) OR Math1090 (Business Algebra) OR Accuplacer CLM score of 60 or better OR ACT Math score of 23 or better OR SAT Math score of 570 or better. <i>Important note:</i> The mathematics department DOES enforce prerequisites for all undergraduate courses. If you were able to register for this class based on your enrollment in the prerequisite course last semester and you did not receive the minimum grade in that course to enter this class, then you will be dropped from this class on Friday of the first week of classes. If you are in this situation, it is in your best interest to drop yourself from this class and enroll in a class for which you have the prerequisites before you are forcibly dropped.
Course Objective	The goal of Math 1050 is to improve quantitative reasoning and prepare for future mathematics learning in Calculus, Linear Algebra and Discrete Mathematics.
Course Description	Numbers, functions, sequences, series, graphs of functions, inverse functions, polynomials, rational functions, n -th roots, exponential functions, logarithms, piecewise defined functions, matrices and matrix equations.
Reading	You are strongly encouraged to have read the chapters before the corresponding class. Even if you spend as little as 10 minutes on this, it makes the discussion in class much clearer, and overall you will save time.

Expected Learning

Outcomes

1. Sketch the graph of basic polynomials (second and third order), rational, radical, exponential, logarithmic and piecewise functions with or without transformations. Be able to identify important points such as x and y intercepts, maximum or minimum values; domain and range; and any symmetry.
2. For rational functions, be able to identify x and y intercepts, horizontal, vertical and oblique asymptotes (end behaviour) and domain. Use information to sketch graphs of functions.
3. For polynomial functions, be able to identify all zeros (both real and complex), factors, x and y intercepts, end behaviour and where the function is positive or negative. Use information to sketch graphs of functions.
4. Understand the connection between graphic, algebraic and verbal descriptions of functions.
5. Given the graph of a function, be able to identify the domain, range, any asymptotes and/or symmetry, x and y intercepts, as well as find a rule for the function if it is obtained from a standard function through transformations.
6. Define i as the square root of -1 and know the complex arithmetic necessary for solving quadratic equations with complex roots.
7. Solve absolute value, linear, polynomial, rational, radical, exponential and logarithmic equations and inequalities.
8. Find the inverse of a function algebraically and graphically.
9. Perform composition of functions and operations on functions.
10. Understand sequences and be able to differentiate between geometric, arithmetic and others such as Fibonacci-type sequences, giving direct formulas where available.
11. Understand series notation and know how to compute sums of finite or infinite arithmetic or geometric series.
12. Solve systems of equations (3×3 linear) and nonlinear equations in two variables.
13. Make sense of algebraic expressions and explain relationship among algebraic quantities including quadratic, exponential, logarithmic, rational, radical and polynomial expressions, equations and functions.
14. Represent and interpret “real world” situations using quadratic, exponential, logarithmic, rational, radical and polynomial expressions, equations and functions.

Attendance

Like any college course, attendance is not mandatory. However, concepts will be thoroughly explained and reviewed in class, thus it is to your absolute benefit to attend all classes. Students who regularly attend score on average 30% higher on exams than those who do not.

Calculators

Calculators will be useful for homework, but they will not be permitted on exams.

Grading

Grades for each student will be calculated using the following formula:

$$\text{Homework (15\%)} + \text{Quizzes (7\%)} \\ + 3 \text{ Midterms (3} \times 18\% = 54\%) + \text{Final (24\%).}$$

The three lowest quiz grades will be dropped. Your score on the final exam will replace your lowest midterm score or you will receive a 2% bonus to your final exam grade, whichever results in the highest grade. **There will be no make-up exams. Students who miss an exam will receive a “0” on the missed exam.**

1. **Homework:** All homework is to be completed on WebAssign. Due dates for homework assignments can be found on WebAssign. **Late homework will not be accepted.** You will be given ample time to do your assignments and you may ask me questions or you may work with others on assignments. You may submit unlimited answers for each prompt. Please note, homework is a substantial part of your grade for the course (15%), it is to your benefit to do all your homework - partial credit is better than no credit.
2. **Quizzes:** There will be a total of 10 weekly quizzes (Fridays at the beginning of class when there is no midterm.) You must be in attendance to take the quiz. **There will be no make-up quizzes but two lowest quiz scores will be dropped.**
3. **Midterm Exams:** There will be 3 in-class midterm exams. The content will be determined based on the pace of the course. The dates for the midterms are as follows:

Sept. 22nd, Oct. 27, & Dec. 1.

4. **Final Exam:** All students are expected to take the comprehensive final exam. The room will be announced during the last week of classes. All students are expected to arrange their personal schedule to allow them to take the exam. Students with conflicts should speak to the instructor as soon as possible but unless it is an absolute emergency no student will be allowed to take the final exam at a different time. The final exam will be held on

Wednesday, Dec. 13, 2017, 10:30 AM - 12:30 PM.

Letter Grades

Semester letter grades will be converted from the numerical semester scores N as follows:

$93 \leq N \leq 100$: A	$73 \leq N < 78$: C
$90 \leq N < 93$: A-	$70 \leq N < 73$: C-
$88 \leq N < 90$: B+	$68 \leq N < 70$: D+
$83 \leq N < 88$: B	$63 \leq N < 68$: D
$80 \leq N < 83$: B-	$60 \leq N < 63$: D-
$78 \leq N < 80$: C+	$N < 60$: E

Cheating	If a student is caught cheating on any homework, quizzes or exams, they will automatically receive a “0” for that assignment. Depending on the severity of the cheating, they may fail the class. Please note that the use (or even just pulling it out of your pocket) of a cellphone or any other electronic device is considered cheating and cause for receiving an automatic zero on any exams. If you exhibit any other behaviors that are unethical, I will not hesitate to report your behavior to the Dean of Students.
Additional Resources	<p>Mathematics Tutoring Center : The math department offers free drop-in tutoring for students, at the T. Benny Rushing Mathematics Student Center. The center is located underneath the walkway between LCB (LeRoy Cowles Building) and JWB (John Widtsoe Building), and can be accessed by entering either building. Opening hours : Monday - Thursday 8AM- 8PM and Friday 8AM - 4PM. Website : http://www.math.utah.edu/ugrad/mathcenter.html</p> <p>Mathematics Department Video Lectures : Video lectures are available at http://www.math.utah.edu/lectures/math1050.html</p>
ADA Statement	The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability & Access (CDA), located at 162 Olpin Union Building. To do so, contact CDA at 801-581-5020 (V/TDD) to set up an appointment. CDA will work with you and the instructor to make arrangements for accommodations. All information in this course can be made available in alternative format with prior notification to CDA.
Student Responsibilities	All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. You have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies proscribed conduct (Article XI) that involves cheating on tests, collusion, fraud, theft, etc. Students should read the Code carefully and know you are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, beginning with verbal warnings and progressing to dismissal from class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. See http://regulations.utah.edu/academics/6-400.php
Disclaimer	This syllabus is not a binding legal contract. I reserve the right to make changes as I see fit at any time, but all adjustments will be announced.