

Course Syllabus
Mathematics 1080, Section 003, Spring 2017
Precalculus

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Class Hours: MTWHF, 9:40AM-10:30AM, AEB 350

Office Hours: Tuesday 10:30-11:30AM, Thursday 2:00-3:00PM, Friday 8:30-9:30AM, or by appointment

Text and Online Material: "Precalculus, A Functional Approach to Graphing and Problem Solving", 6th Edition, Karl J. Smith, with website accompanying the book at www.webassign.net. For information about the options to purchase the above book and website access, go to

<http://www.math.utah.edu/schedule/bookInfo/Math1080BookInfo.pdf>.

Class notes which will be posted on Canvas. You will need to print those out and bring and fill them out in class. Please note: You can print them in the Math Computer Lab for no cost starting week 2.

Prerequisites: Prerequisite Information: At least a B grade in Math1010 or Math1050 or Math1060 OR Math ACT score of at least 24 OR Math SAT score of at least 560 OR Accuplacer CLM score of at least 65 (within the last two years).

Course description: Provides an accelerated, in-depth review of college algebra and trigonometry to prepare for science-track calculus courses. Most topics from Math1050 and Math1060 are covered in this course.

Course Information: Math1080, Precalculus is a 5-credits semester course.

Expected Learning Outcomes: Upon successful completion of this course, a student should be able to:

1. Solve absolute value linear inequalities and polynomial/rational inequalities.
2. Graph polynomial, rational, radical, exponential, logarithmic, trigonometric, and piecewise functions, using transformations as well as information about the domain, asymptotes, symmetry, and/or intercepts.
3. Given the graph of a function, be able to identify the domain, range, asymptotes, symmetry and zeros, as well as find the rule for the function if it is obtained from a standard function through transformations.
4. Find the inverse of a function algebraically and graphically.
5. Understand and be able to find the domain of functions. Perform composition of functions and operations on functions.
6. Find the difference quotient of a function and use this to find lines related to curves of functions.
7. Understand the connections between graphic, algebraic, and verbal descriptions of functions, in particular polynomials.
8. Find all zeros, including complex, of a polynomial function.
9. Solve exponential, logarithmic, rational, radical, trigonometric, and polynomial equations.
10. Use the Binomial Theorem and Pascal's Triangle to expand a binomial expression.
11. Solve systems of linear equations with matrices, using Gauss-Jordan elimination and inverse matrices.
12. Perform matrix arithmetic and compute inverse matrices.
13. Recognize the formulas for and graph parabolas, hyperbolas and ellipses (including circles).
14. Understand trigonometric function definitions in the context of the right triangle and on the unit circle.
15. Be able to convert to and from rectangular and trigonometric-form coordinates (polar coordinates not explicitly covered).

16. Use trigonometric inverses correctly, understanding the domain/range restrictions.
17. Verify trigonometric identities, using proper logic and use trigonometric identities to evaluate expressions.
18. Solve for all measurements in any triangle, using the Pythagorean Theorem, trigonometric functions of angles, the Law of Sines and Law of Cosines, along with applications.
19. Graph complex numbers in a plane, perform operations on such numbers and use DeMoivres theorem to find roots and powers of complex numbers.
20. Understand sequences and be able to differentiate between geometric, arithmetic and Fibonacci-type sequences, giving direct formulas where available.
21. Understand series notation and know how to compute sum of finite arithmetic and geometric series.

Homework: I will collect homework on Wednesdays and Fridays each week. Each section of homework will be worth ten points. Most sections will be graded on completeness and the correctness of one randomly chosen problem. Some sections will be grades on completeness alone. A rubric explaining what is required to be complete and correct will be provided in class. Since you will only be given feedback on up to one problems correctness per section, it is your responsibility to make sure that you understand the homework content, so that you are prepared for exams. Also, note that there is no way to get an A in this course if you choose not to do any of the homework. The homework is to be turned in according to the following instructions:

1. Each homework set must be stapled together, have any raggedy edges cut off, and have a filled out cover sheet on the front. Cover sheets will be provided in class. A homework set that is not stapled, has a rough edge, lacks a coversheet or lacks a name or uID will receive a 0, but can be turned later in as a late homework (see below)! Please do not come to class hoping that I or someone else will have a stapler or scissors.
2. I will accept 10 late homework sections, up to two weeks late, throughout the semester for full credit. I will not accept homework more than two weeks late. It is not necessary nor recommended that you tell me why your homework is late. This policy is meant to be flexible enough to cover all reasons.
3. I only collect homework on Wednesdays and Fridays! If you need to turn in homework late, you will have to do so on one of these days in class, within two weeks after its due date. This is the only time and location that I will accept homework.

Homework Quizzes (in Canvas): 5-10 times each semester, you will be asked to watch videos before class in order to prepare for class. There will be a quiz after these videos. These quizzes will be worth 10 points and count toward your homework grade. They cannot be made up late, but your lowest quiz will be dropped.

WebAssign Quizzes: There will be a weekly online WebAssign quiz, even on test weeks. The weekly quiz will cover the material presented that week in class. There will also be a pre-test and post-test given in quiz format and counting toward your grade. The quizzes will open on Fridays at 5:00 a.m. and close on Sundays at 11:59 p.m. The quizzes will be timed, so you need to complete them in one sitting. Your lowest two quiz scores will be dropped.

Mid-term exams: There will be three one-hour midterm exams throughout the semester:

1. Friday, February 3
2. Friday, March 3
3. Friday, April 7

They will be during normal class time (starting 5 minutes earlier and finishing 5 minutes later), in our usual classroom. Because of the quantity of material covered in Math 1080, exams will cover material introduced in class 1-2 days before the exam. Students are advised and will be provided video links to be able to preview this material earlier.

You must bring a valid ID to the exam. Absence from an exam will be excused only if you can provide verifiable and convincing evidence that you have a significant illness or serious family crisis that will prevent you from attending. Except under extremely unusual circumstances, you must inform me in advance of the missed test. **It is your responsibility to promptly make arrangements with me to make up the test, I reserve the right to not give you a make-up exam if I think your excuse is not valid or if you contact me more than one week after the missed test.** I reserve the right to make alternate exams more difficult than the scheduled exam.

Final: The final exam for this class is comprehensive and it will occur on Tuesday, May 2nd, from 3:30 to 5:30 p.m. The location will be announced. This is a departmental final. You are required to take it at this time, unless you have multiple finals schedules for the same time slot. Please determine the times of your other finals to see if there is a conflict and contact me with this information.

Grading Policy: The grades will be calculated as follows:

Homework	15 %
Weekly Quizzes	10 %
Mid-term exams	50% (two highest 20% each, lowest 10%)
Final Exam	25%

Grades (Evaluation and criteria): Final letter grades will be determined by overall percentage as follows:

A	93% – 100%	B	83% – 86%	C	73% – 76%	D	60% – 66%
A-	90% – 92%	B-	80% – 82%	C-	70% – 72%	D-	50% – 59%
B+	87% – 89%	C+	77% – 79%	D+	67% – 69%	E	0% – 49%

Calculators: Most of the math that we cover can be done without the use of calculators. Exams will be written so that using a calculator is not necessary and calculators will not be allowed. You should not use calculators on quizzes, unless the problem instructs you to do so. It is in your best interest to try to do homework problems without calculators, however there are a few calculation intensive problems for which scientific or graphing calculators are appropriate. If you do not own a scientific/graphing calculator, there are free online calculator applications.

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 and Access, 162 Olpin Union Building, 581-5020 (V/TDD). 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 the Center for Disability and Access.

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.

<http://regulations.utah.edu/academics/6-400.php>

Tutoring: The Rushing Math Center offers free drop-in tutoring, a computer lab, and study areas for undergraduates. The Rushing Student Center is adjacent to the LCB and JWB. The hours for the spring semester are: 8 am – 8 pm Monday to Thursday and 8 am – 6 pm on Friday.

Classroom Etiquette: Please turn off your cell phones while you are in class. The use of laptops is not allowed in the classroom. I will expect respectful behavior in my classroom. If I think that your behavior is disrespectful or distracting, I will ask you to leave the class.

Cheating: If you cheat on any homework, quiz or exam, I will give you a grade of zero for that work. Depending on the severity of the cheating, I may decide to fail you from the class. In all cases, I will report the incident to the Dean of Students, and to the International Students Office in the case of an international student.

Webpage: All information concerning this class will be posted on the Canvas webpage of the class. Any important information will be given in class and on the Canvas webpage. **You are responsible for checking the webpage on a regular basis** (you can have the communication from Canvas forwarded to your email address).

Disclaimer: This syllabus may change during the semester. If I do any modification to this syllabus, I will let you know in class and post the new syllabus on the Canvas webpage.

Some important dates for this class:

Monday, January 9	First day of class
Friday, January 13	Last day to add without permission
Monday, January 16	Martin Luther King Day
Friday, January 20	Last day to drop and add class
Friday, February 3	First mid-term exam (in class, 9:35 AM - 10:35 AM)
Monday, February 20	Presidents Day
Friday, March 3	Second mid-term exam (in class, 9:35 AM - 10:35 AM), last day to withdraw
March 13 - March 18	Spring break
Friday, April 7	Third mid-term exam (in class, 9:35 AM - 10:35 AM)
Tuesday, April 25	Last day of class
Tuesday, May 2	Final exam (location TBA, 3:30 PM - 5:30 PM)