

Mathematics 1080-01

Fall 2018

- Instructor:** Sean Groathouse
- Class Time and Place:** 11:50 am – 12:40 pm on M, Tu, W, Th, F
in [JFB 102](#)
- Office Hours:** Mondays 12:45 – 1:45 pm in JWB 308,
Thursdays 10:40 – 11:40 am ST 208,
Before or after class most days,
or by appointment.
- Office Location:** [LCB](#) Loft (4th floor)
- E-mail address:** sean@math.utah.edu
- Class Web Page:** On Canvas; sign in through CIS or go to
<https://utah.instructure.com/courses/511829>

Dates:

Homework: Usually due Tuesdays and Fridays at the start of class

Online Quizzes: Open from Friday-Sunday each week

Exams: Mondays: September 17th, October 22nd, November 19th

Final Exam: Wednesday, December 12th, 3:30-5:30 pm

Last Day to Add/Drop: Friday, August 31st

Last Day to Withdraw: Friday, October 19th

Text/ Online Materials:

(1) *Precalculus, A Functional Approach to Graphing and Problem Solving, 6th Edition, Karl J. Smith*

(2) *Website accompanying the above text 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>

(3) Class notes which will be posted on Canvas. You will need to print those out and bring and fill them out in class, because I'll use them in the lectures and there is not time to write down the information contained in them. (Please note: You can print them in the Math Computer Lab for no cost.)

Course Description: Provides an accelerated, in-depth review of college algebra and trigonometry to prepare for science-track calculus courses. Most topics from Math 1050 and Math 1060 are covered in this course.

Updated August 16, 2018

Course Information: Math 1080, Precalculus is a 5-credit semester course. According to university guidelines, an average student should expect to spend 15 hours per week working on this class in addition to the lecture time.

Prerequisite Information: At least a B grade in Math 1010 or Math 1050 or Math 1060 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)

Important Note: 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. Please let me know if you have questions about prerequisites.

Future Courses: Most students who take Math 1080 plan to go on to calculus. A grade of C in Math 1080 is a prerequisite for Calculus 1, Math 1210. You can obtain the same prerequisite by completing Math 1050 and Math 1060.

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 DeMoivre's 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.

Free Math Tutoring: T. Benny Rushing Mathematics Student Center (adjacent to JWB and LCB), Room 155

M – Th	8 am – 8 pm
F	8 am – 6 pm

The center opens the second week of classes. It is closed Saturdays, Sundays and holidays. They also offer group tutoring sessions, if you form a group. If you are interested, inquire at the Tutoring Lab. <http://www.math.utah.edu/ugrad/tutoring.html>

Private Tutoring: University Tutoring Services, 330 SSB (they offer inexpensive tutoring). There is also a list of tutors at the Math Department office in JWB 233.

Computer Lab: also in the T. Benny Rushing Mathematics Student Center, Room 155C. Same hours as Tutoring center above. Link to computer lab is <http://www.math.utah.edu/ugrad/lab.html>

Course Breakdown: The grades will be calculated as follows:

Homework	15%
Weekly Quizzes	10%
Midterm	20%
Midterm	20%
Midterm	10%
Final Exam	25%

(Note: There will be 3 midterms. Your lowest midterm score will count for 10% of your grade and your top two midterm scores will each count for 20% of your final grade.)

Homework: Homework will be due and collected in class on Tuesdays and Fridays each week. Each section of homework will be worth ten points. For example, if there are three sections of homework assigned, then that homework set is worth a total of 30 (raw) points.

Most sections will be graded on completeness and the correctness of one randomly chosen problem. Some sections will be graded 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 problem's correctness per section, it is your responsibility to make sure that you understand the homework content, so that you are prepared for exams. Please let me know if you have any questions

about homework problems that were not graded. Also, note that there is no way to get an A in this course if you choose not to do any of the homework. On the other hand, turning in all of the homework can help your grade substantially.

The homework is to be turned in according to the following instructions. **You are responsible for knowing these policies.**

- **Each homework set MUST be stapled together with a filled out cover sheet on the front.** Cover sheets will be provided in class. A homework set that is not stapled, lacks a cover sheet or lacks a name will receive a 0, but can be turned in as a late homework (see below). Please be prepared to hand in homework when you arrive.
- **I will accept up to 10 late homework *sections*, up to two weeks late, throughout the semester for full credit.** Homework will never be accepted more than two weeks late. This policy allows for illness, oversleeping, hectic schedules, etc. Except for extraordinarily severe circumstances, there are no exceptions to this policy. It is not necessary to explain why homework is late, as this policy is meant to be flexible enough to cover all reasons.
- **All homework must be turned in directly to me.** Homework that isn't given directly to me can easily be lost or overlooked, which may result in a 0 for the lost homework, or the homework being counted as late when it is found after the due date.

Weekly 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 first week's quiz is a pre-test and the last week's is a post-test. They both count toward your course grade. The quizzes will open on Fridays at 5:00 am and close on Sundays at 11:59 pm. The quizzes will be timed, so you need to complete them in one sitting. **Your lowest two quiz scores will be dropped.**

Midterm Exams: There will be three one-hour midterm exams throughout the semester:

- Monday, September 17th
- Monday, October 22nd
- Monday, November 19th

They will be during normal class time, in our usual classroom. Because of the quantity of material covered in Math 1080, exams will cover material up to what is introduced in class 1-2 days before the exam. Students will be provided video links to be able to preview this material earlier. When each midterm is returned, you will be given a set of personalized feedback questions to answer. These will count towards your homework grade.

Final Exam: The final exam for this class is comprehensive and it will occur on Wednesday, December 12th, from 3:30 to 5:30 pm. The location will be announced. This is a departmental final, which means all student in all Math 1080 classes take it at the same, instead of during the slot that is assigned based on class meeting time. You are required to take it at this time, unless you have multiple finals scheduled for the same time slot. Please make arrangements to be there at the start of the semester. Also, please determine the times of your other finals to see if there is a conflict and contact your instructor with this information.

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 (in which case a scientific calculator is sufficient). 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. When in doubt, please ask. If you do not own a scientific/graphing calculator, there are free online calculator applications you can use.

Online Grades: I will enter grades online on Canvas. You can get there from the main University of Utah website www.utah.edu. To log in, you use the same student id and password that you use for Campus Information System. I do my best to update the grades on a regular basis and keep everything accurate. However, please check your grades often to make sure there were no data entry mistakes. I'm always happy to correct any mistakes I've made.

Grading Scale: The grade scale will be: A [93-100), A- [90-93), B+ [87-90), B [83-87), B- [80-83), C+ [77-80), C [73-77), C- [70-73), D+ [67-70), D [60-67), D- [50-60), E [0-50). Although I'm not philosophically opposed to curving grades, I find it's rarely necessary. If I do need to curve the grades, I will simply shift everything down by a few points (whatever is necessary).

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, formerly CDS). To do so, contact them at 801-581-5020 (V/TDD) to set-up an appointment. CDA will work with you and me 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. <http://regulations.utah.edu/academics/6-400.php>

Addressing Sexual Misconduct: Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

Wellness Statement: Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the

University of Utah. For helpful resources contact the Center for Student Wellness at www.wellness.utah.edu or 801-581-7776.

Student Names and Personal Pronouns: Class rosters are provided to the instructor with the students legal name as well as Preferred first name (if previously entered by you in the Student Profile section of your CIS account). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class, on papers, exams, group projects, etc. Please advise me of any name or pronoun changes (and update CIS) so I can help create a learning environment in which you, your name, and your pronoun will be respected. If you need assistance getting your preferred name on your U-ID card, please visit the LGBT Resource Center Room 409 in the Olpin Union Building, or email bpeacock@sa.utah.edu to schedule a time to drop by. The LGBT Resource Center hours are M-F 8am-5pm, and 8am-6pm on Tuesdays.

Additional Policies: Due to experience, I have decided to make some additional policies regarding my classroom administration and grading.

- I do not allow the use of laptops in class, in order to minimize student distractions. At this point, it's almost impossible to take notes for a math class on a laptop in real time. Thus, it is unnecessary in class. If you are writing digitally using a tablet, iPad, hybrid laptop, or similar device which can lay flat on your desk, that is totally fine.
- There will be no retakes of exams, for any reason.
- If you have crisis-level extenuating circumstances which affect your class performance and you need guidance/advice/flexibility, please communicate with me as soon as possible so I can help you in some manner, which I'm truly happy to do. The longer you wait to communicate with me, the less I can and am willing to do to help.
- If you have an emergent, extenuating circumstance that makes it necessary to take an alternate exam, it is your responsibility to discuss that with me, before the exam occurs, or as soon as possible. In general, I allow exams to be taken early, but not late.
- I will kindly demand respectful behavior in my classroom. Examples of disrespect include, but are not limited to, reading a newspaper or magazine in class, social chatting with your friend in class, text-messaging during class, excessive use of your cell phone, or cuddling with your significant other in class. If you choose to be disrespectful with distracting behavior during our class, please keep in mind that you put me in a position of choosing between protecting/taking a stand for you OR for the other students or myself whom you are disrupting. I can guarantee I will choose to stand for the students who are there to learn without disruptions and I will thus take action to terminate your distracting behavior, and that action may not be desirable for you.
- There shall be no cursing nor negative ranting (for example, "math sucks") on any written work turned in. The penalty for such things on written work will be a zero score on that assignment or test.
- I will regularly post announcements to the class in Canvas and will hold you accountable for receiving that information. Be sure to turn on your notifications in Canvas so you are alerted to announcements I make in Canvas as well as grade changes, discussion posts, etc.

- If you have questions about any exam/assignment/quiz grade, or you want to appeal the grading of the exam/assignment/quiz, you must bring it to me within one week of the exam/assignment/quiz being turned back in class. I'm happy to look over your appeal and/or questions and give my feedback in order to benefit your learning. But, it must be done in this time frame of one week from when I hand back the exam/assignment/quiz.
- If you cheat on any homework, project, quiz, or exam, you will automatically get a zero for that grade. Depending on the severity of the cheating, I may decide to fail you from the class. Please note that the use (or even just pulling it out of your pocket) of a cell phone or any other electronic internet device is considered cheating and cause for receiving an automatic zero on any exam. Also, if you exhibit any other behaviors that are unethical, like offering me a bribe to give you a better grade (even if you later claim you were joking), I will report your behavior to the Dean of Students.
- Please make sure you do your best throughout the semester, knowing the grading scheme and what's expected of you, and come talk to me if you need further study strategies. I will be happy to brainstorm ideas to help you maximize your study strategies and improve your mathematical understanding. I will offer an extra credit question on every midterm and final exam, to help make up for arithmetic mistakes. But, I will not offer any additional extra credit at the end of the semester or any other way for you to improve your grade at that time. There are no exceptions. Please talk to me early on about any concerns with your grade.
- Although I don't expect any changes will be necessary, I reserve the right to change my policies stated in this syllabus at some point in the semester. If changes are necessary, I will announce the changes in class and through Canvas.