Mathematics 1080-02
Spring 2019

Instructor: Nathan Willis

Class Time and Place: 8:35 AM- 9:25 AM; M, T, W, H, F

Office Hours: TBD

Office Location: JWB 226

E-mail address: willis@math.utah.edu

Class Web Page: On Canvas; sign in through CIS or go to https://utah.instructure.com/

Dates:

Homework:	Usually due Tuesdays and Fridays in class
Online Quizzes:	Open from Friday-Sunday
Exams:	Monday, February 4, 5-6:30 p.m., JFB 103
	Monday, March 4, 5-6:30 p.m., JFB 103
	Monday, April 8, 5-6:30 p.m., JFB 103
Final Exam:	Thursday, April 25, 3:30-5:30 p.m., location TBA
Last Day to Add/Drop:	Friday, January 18
Last Day to Withdraw:	Friday, March 8

Course Materials:

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

(2) *Website accompanying the above textbook 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/Textbook%20Info%20Math%201080_revised2018.pdf

(3) *Class notes (course packet) for Spring 2019. You may purchase this from Amazon (info will be given by email) or download and print them from Canvas. You will use them in each class, filling in the blanks. This way you can spend more time in class thinking and less time copying down information. The class notes are updated each semester, so get the most recent version.*

(4) *HW cover sheets. You are required to submit the HW with these cover sheets. There is a pdf on Canvas containing all the cover sheets for the entire semester.*

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.

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.

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 over two semesters.

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. Solve systems of linear equations with matrices, using Gauss-Jordan elimination and inverse matrices.
11. Perform matrix arithmetic and compute inverse matrices.
12. Recognize the formulas for and graph parabolas, hyperbolas and ellipses (including circles).
13. Understand trigonometric function definitions in the context of the right triangle and on the unit circle.
14. Be able to convert to and from rectangular and trigonometric-form coordinates (polar coordinates not explicitly covered).
15. Use trigonometric inverses correctly, understanding the domain/range restrictions.

16. Verify trigonometric identities, using proper logic and use trigonometric identities to evaluate expressions.
17. 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.
18. Graph complex numbers in a plane, perform operations on such numbers and use DeMoivre's theorem to find roots and powers of complex numbers.
19. Understand sequences and be able to differentiate between geometric, arithmetic and Fibonacci-type sequences, giving direct formulas where available.
20. Understand series notation and know how to compute the 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 a.m. - 8 p.m.
F	8 a.m. - 6 p.m.

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 JWB233.

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: Each section of homework will be worth ten points. For example, if you have three sections of homework assigned, then that homework set is worth a total of 30 points. There is a pdf containing all the coversheets for HW assignments for the entire semester. The coversheets list the problems and may provide space to work some problems. You should attach additional pages to the coversheets as necessary.

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. 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, have any raggedy edges (from being torn out of a spiral notebook) cut off, and be submitted with the official coversheet (not a homemade one).** A homework set that is not stapled, has a rough edge, lacks a coversheet or lacks a name or uNID will receive a 0, but can be turned in again as a late homework (see below)!! Please do not turn in homework held together with something other than a staple (like a paperclip or hair-tie). This will also receive a 0. No exceptions will be made, so either take care of this before class or invest in a mini stapler to carry with you to class.

- **10 late homework *sections* will be accepted (up to two weeks late), throughout the semester for full credit.** I will not accept homework more than two weeks late. I accept these late homework sections to allow for unforeseen events like oversleeping, hectic schedules, illness where you do not visit a doctor (like a cold), etc. Do not ask for exceptions to this policy unless the circumstances are serious, since the late policy is meant to cover most situations. I won't ask for the reason your homework is late. You will simply indicate the homework section is late on the cover sheet (up to 10 times throughout the semester.)

- **I only collect homework on the days listed**. If you need to turn in homework late, you will have to do so on one of these days in class (within two weeks from the due date). This is the only time and location that I will accept homework. If you slide homework underneath my office door, it will be returned to you ungraded to be submitted late. I also do not accept emailed scanned versions of homework.

- **If you know you will be absent on a HW collection day, complete the HW before your absence and arrange to turn it in ahead of time.** This applies to unexcused absences (like vacations or work schedules) and to absences due to planned medical events, officially sanctioned University activities, government obligations, and religious obligations.

- **If there is an unplanned situation beyond your control that prevents you from turning in HW on time** (like illness, injury, car accident, or serious family situation), **you must provide third-party documentation of the situation. Then you may turn in HW without penalty at the first HW collection time after the situation is resolved.** If you will need more time than this to complete HW, talk to me to arrange an alternative due-date. HW that comes in after this will count as late.

- **Exam reflections are counted toward homework, but cannot be submitted late,** expect for excused reasons. Instead, you can earn extra credit for turning them in early.

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. The 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 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**.

It is recommended that you take quizzes earlier in the quiz window, especially if you are travelling or

working on the last day to take the quiz. If you are unable to take a quiz due to an unplanned situation beyond your control and reasonable prevention, submit documentation and request an extension of the quiz.

Midterm Exams: There will be three ninety-minute midterm exams during the semester. The exams will be held outside of class, at the times and location on the first page of the syllabus. Having more time to take exams that can be given in class is beneficial for two reasons. First, since Precalculus is an accelerated course, more material is covered on each exam than in college algebra or in trigonometry. The longer exam time allows the exam to reflect more of the material covered in class. Second, the longer exam time means that students can be less rushed during the exam.

If you are unable to take an exam at the time given, an alternate exam can be set up, provided the situation preventing you from taking the exam is beyond your reasonable control and you provide documentation as follows:

- Students who have planned absences (for example, officially sanctioned University activities like band, debate, student government, intercollegiate athletics, government obligations like military duty, or religious obligations) must provide documentation early in the semester and then send an email reminder at least a week before the exam.
- Students who have absences that arise suddenly (like illnesses, deaths in the family, or last-minute university-related sports activities) must contact me as soon as possible (given the situation) and follow up with documentation.

All other students should arrange their work and personal schedules to take exams at the scheduled times.

There will be no retakes of midterm exams for any reason.

Final Exam: The final exam for this class is comprehensive. Math 1080 has a departmental final, which means all students 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. The location will be announced. Early on in the semester, you must determine the times of your other finals to see if there is a conflict and contact your instructor with this information. Alternative arrangements will then be made.

There will be no retakes of the final exam for any reason.

Gradescope: Exams will be graded with an online grading program called Gradescope. When exams are graded, an email with a link to the graded exam will be sent to your university email address. You will be required to print out the feedback you receive with your exam on Gradescope and attach it to your exam reflection assignment.

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, but there are a few calculation intensive problems for which scientific or graphing calculators are appropriate. When in doubt, ask. If you do not own a scientific/graphing calculator, there are free online calculator applications.

Online Grades: I will put your grades online on Canvas. You can get there easily 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, I would advise you to check your grades often to make sure there were no data entry mistakes. I'm always happy to correct any mistakes I've made if you let me know about them.

If you have questions about any exam/quiz/homework grade, or you want to appeal the grading of the exam/quiz/homework, you must bring it to me <u>within one week</u> of its return to you. I'm happy to look over your appeal and/or questions and give my feedback in order to benefit your learning.

Grading Scale: The grading scale will be the usual:

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).

Curving grades at the end of the semester is rarely necessary. If I do need to curve the grades, I will simply shift everything down by however much 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

Cheating: 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 an 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.

Missing class: If you miss a day of class, it is your responsibility to get caught up with the material. I do not need to know why you missed class, or even that you missed class at all (unless you will be gone for an extended period due to special circumstances), so please do not email me expecting a summary of what you missed. I will update the schedule of covered material (on Canvas) every day after class. There are video supplement resources for most sections listed in the front of the course packet. You can also read the sections in the textbook and/or borrow notes from a classmate who was in class. I am happy to help you with material you missed during my office hours or a separate meeting, but please do not treat the office hours as a time to get the notes you should have taken in class.

Specific Classroom policies:
- Cell phones should be put away during class. If there is an emergency situation, let me know. If you need to use your phone during class, please leave the classroom.
- There will be no cursing or negative ranting (for example, "math sucks") either verbally or on any written work turned in. The penalty for such things on written work will be a zero on that assignment or test.
- There will be no disrespectful behavior in the classroom. Examples of disrespect include, but are not limited to, reading a newspaper or magazine in class, social chatting with your friend in class, texting or using your phone, or cuddling with your girl/boyfriend in class. If you choose to be disrespectful with distracting behavior during my class, I will take action to terminate your disruptive behavior, and that action may not be desirable for you.

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.

Classroom Social Equity: I strive to be ethical, kind, fair, inclusive, and respectful in my classroom and expect students to behave likewise. In this regard, I have these requests of you, my student:
1. Please do tell me, discreetly, if you have any sort of anxiety disorder, TBI, PTSD, C-PTSD, or any other challenge that would cause psychological harm to you by me calling on you in class. I want students to feel a little uncomfortable and stretched during class, while working on problems as a large group, but I definitely don't want to cause anyone harm. So, please discreetly tell me if that is the case for you and I will confidentially accommodate your request.

2. If your preferred name is different than your legal first/last name (the preferred name you chose does indeed show up in CIS on my roll sheet, but not yet in Canvas), please let me know. It also helps if you log into Canvas and go to Account (on far left)-->Settings and change your Display Name to be the name you prefer to be addressed by.
3. If there is ever a time that you feel this course or the curriculum is not equitable, please email me or meet with me to discuss your concerns so I have a chance to address that.

Preferred Name and Pronoun: Class rosters are provided to the instructor with the student's legal name as well as their 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 correspondence, discussions, in office hours and on assignments, 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 UIDcard, 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.

Email: All correspondence for this class will be done through UMail or Canvas. You need to be checking your UMail daily during the week, and also checking for Canvas updates and announcements. If you do not check your UMail or Canvas regularly, you should have your messages forwarded to an email address that you do check. It is your responsibility to stay caught up on announcements, schedule changes, etc., and not seeing an email with the information is not an excuse.

You should always feel free to email me at willis@math.utah.edu with questions about course material, your grade, course policies, other concerns, or to set up a meeting outside of office hours. I will respond to all student emails in a timely fashion (within 24 hours, but more quickly if it is a time-sensitive situation) between 8am and 5pm on weekdays. If you email me after 5pm I may not get back to you until the next day. If you email me over a weekend, I may not get back to you until the following Monday. (But I will do my best to respond to time-sensitive emails as soon as possible). Also, if you are emailing with a question regarding a math problem: It helps me immensely if you include the problem statement (either typed out or attached as a photo or scanned image) and also a brief summary of steps you have taken so far (again, either typed out or attached in an image). This will allow me to give you the best feedback possible.

Extenuating Circumstances: If you have crisis-level extenuating circumstances which require flexibility, it is completely your responsibility to communicate with me as soon as possible so I can help you in some manner. The longer you wait to communicate with me, the less I can and am willing to do to help.

Additional Policies:

- 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 extra credit on every quiz, midterm, and the final exam, mostly 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. No exceptions will be made. Please respect this and do not ask for special favors or extra credit when you realize

you don't like your grade. Instead, come talk to me early if you are not satisfied with your scores so we can talk about ideas for improvement.

- I reserve the right to change my policies stated in this syllabus at any point in the semester. If I do make a change to a policy, I will announce it in class, by email, and on Canvas.