Mathematics 1080-001
Fall 2017

Instructor: John Hull

Class Time and Place: 11:50 am – 12:40 pm M,T,W,Th,F
in JFB 102

Office Hours: Tuesdays 1-2 pm
Fridays 1-2 pm,
Also after most classes for 10-20 minutes (flag me after class)
or by appointment

Office Location: JWB 326

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

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

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 the information contained in them down. (Please note: You can print them in the Math Computer Lab for no cost starting Week 2 of the term)

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-credit semester course.

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)

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.

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 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 are also offer group tutoring sessions, if you form a group. If you're 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: I will collect homework on Tuesdays and Fridays each week. 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 (raw) 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 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. 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, have any raggedy edges (from being torn out of a spiral binder) 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 uNID will receive a 0, but can be turned 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. Be prepared when you arrive.

- **I will accept 10 late homework *sections*, up to two weeks late, throughout the semester for full credit.** <u>I will not accept homework more than two weeks late</u>. I accept these late homework sections to allow for illness, oversleeping, hectic schedules, etc. Do not ask for special favors with regard to the homework policy, unless the circumstances are extraordinarily severe, because my response will not be in your favor. Also, 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.

- **I only collect homework on Tuesdays 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 <u>only</u> 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.

Class Preparation Quizzes (found in Canvas): 3-8 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. Your lowest 1 quiz will be dropped.

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 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**.

Midterm Exam: There will be three <u>one-hour</u> midterm exams throughout the semester:
- Tuesday, September 19th
- Tuesday, October 24th
- Tuesday, November 21st

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 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 Tuesday, December 12, from 3:30 to 5:30 p.m. 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 schedules 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, 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. You just need to let me know about them.

Grading Scale: Although I'm not philosophically opposed to curving grades, I find it's rarely necessary. The grade 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). 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 & Accesss (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

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

- Cell phones should be put away during class. If you are using a computer to take notes, it must be flat. (No computers with open screens). If you need to use your phone during class, please leave the classroom.
- There will be no retakes of exams, for any reason.

- 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.

- You may take an alternate exam if you talk to me about it first and explain the emergent, extenuating circumstances that make it necessary. It is 100% your responsibility to communicate with me as soon as is possible, before the exam occurs (or as soon as possible). I reserve the right to make alternate exams more difficult than the scheduled exam.

- I will 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, or cuddling with your girl/boyfriend in class. If you choose to be disrespectful with distracting behavior during my class, I can guarantee I will take action to terminate your disruptive behavior, and that action may not be desirable for you.

- There will 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.

- You need to check announcements in Canvas. If you do not check Canvas regularly, you should have announcements forwarded to an e-mail address that you do check regularly.

- 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 within one week of the return of the exam. I'm happy to look over your appeal and/or questions and give my feedback in order to benefit your learning.

- 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. No exceptions. Please respect this and do not ask for special

favors or extra credit when you realize you don't like your grade.

- 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.

I reserve the right to change my policies stated in this syllabus at some point in the semester. If I do make a change to a policy, I will announce it in class on