Syllabus Spring 2020

MATHEMATICS 1030-06
Introduction to Quantitative Reasoning (3 credits)

Instructor: Aurora Jensen

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Textbook: Using and Understanding Mathematics: A Quantitative Reasoning Approach, by Jeffrey O. Bennett and William L. Briggs (custom edition for University of Utah, taken from the sixth edition)
ISBN-10: 1-269-74850-5
ISBN-13: 978-1-269-74850-6

A. The least expensive option for the book is to buy it through the Inclusive Access Program. An email will go out to all math 1030 students (sent by the bookstore to your .edu email address) prior to the first day of class with information on what Inclusive Access is and instructions on how to access the digital course materials. You can access the book through the Canvas link "Bookshelf". If you (the student) decide you don't want the instant access to the course materials you will have the option to OPT OUT and will be refunded accordingly. Students still need to pay for the course materials cost along with their tuition, but once you OPT OUT during the first two weeks of class you will receive a full refund of the course material cost. You will then be responsible for obtaining you own course material/textbook for that course. Through the Inclusive Access Program, students will receive a digital copy of the book. The students' cost for math 1030 access is $39.00.

B. If a student wishes to order a hard copy of the book, he/she can talk to Shane Girton (U of U Bookstore) and a copy of the book can be special ordered. The new copy of the custom version for the U of U is $110.

C. A student can choose to rent the book (180-day rental) or buy eTextbook at the following website:
https://www.vitalsource.com/products/using-and-understanding-mathematics-a-jeffrey-o-bennett-v9780321912343

The current cost for math 1030 book is $41.99 through this website.

D. The book can be rented/purchased through a variety of vendors, such as eBay, Amazon or similar websites. The cost is usually more than the Inclusive Access cost and it changes daily.

NOTE: Before you purchase the textbook please make sure that Math 1030 is a good fit for you and you are not planning to withdraw from the class. Some vendors will not allow you to return the book for a refund if you decide to withdraw. Please read all policies associated with the return/refund before you purchase and pay for the book.

Prerequisites: "C" or better in MATH 980 (Algebra for College Success) or Math 1010 (Intermediate Algebra) OR Accuplacer EA score of 60 or better (taken prior to January 14th, 2019) OR Next Generation Accuplacer QAS score of 250 or better (taken after January 30th, 2019) OR ACT Math score of 19 or better OR SAT Math score of 500 or better.
Note: You can place into math courses with the ACT/SAT or Accuplacer Exam scores if you took the exam within the last 2 years.

Before enterring this class, you should be able to manipulate variable expressions, work with simple linear equations and graphs, work with fractions and exponents, and know the basic properties of simple geometric shapes.
(Note: Math 1030 does not satisfy a Math 1050 or Math 1090 prerequisite.)

Course objectives: Math 1030 course will fulfill the Quantitative Reasoning – Math QA, general education requirement for graduation.
This course addresses the following Essential Learning Outcomes: inquiry and analysis, critical thinking, written and oral communication, quantitative literacy, teamwork, and problem solving.

Math 1030 is an application-based course centered around the use of mathematics to model changes in the real world, and the effective communication of these mathematical ideas. The course is based on Chapters 1-4, 8,9, and Chapter 10 (sec. A). You are expected to read each section that we cover.

For every hour of lecture, the university suggests that you invest 2-3 hours of additional work (every week). This means that for this 3 credit hour class, you need to put in 6-9 hours of additional work on a weekly basis.

At the end of the course a student should be able to:

- use Venn diagrams to examine relationships between sets and the validity of simple deductive arguments
- use an appropriate sentence to describe both the absolute and percent change in a given quantity and interpret such statements about the change
- use simple and compound units, making conversions when necessary, and develop accurate comparisons between units
- evaluate the impact of compound interest on simple financial decisions
- use the savings plan and loan formulas to calculate the payment amount into the savings plan when a certain financial goal needs to be achieved, to calculate the mortgage payment or interest paid over the life of the loan and discuss whether those results are realistic (or not), compare several loans with different interest rates in order to make financial decisions
- compare and illustrate the features of linear and exponential growth using practical examples

- determine simple areas, volumes, and explain the differential effect of scaling on perimeter, area, volume as well as some of the practical implications of scaling

Homework: Please see the schedule. It is highly recommended that you solve the sugested problems. I will not collect the homework. The success in this class is supported by a constant attempt of the homework.

Quizzes: There will be a quiz every other week. The three lowest scores of the quizzes will be dropped.

Exams: You will have 2 exams (50 minutes each). 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 personal or family crisis that will prevent you from attending. Except under extremely unusual circumstances, you must inform me at least 5 days in advance of the missed test, and you must take the make-up exam prior to the actual exam date. University excused absences (band, debate, student government, intercollegiate athletics, etc.), military duty or religious obligations are excused with an official documentation addressing the reason for absence. You are expected to promptly make arrangements with me to make up the test. Vacation or work schedule are not considered to be excused absences.

Exam Dates: **Exam 1-Wednesday 02/19**
Exam 2-Wednesday 04/08
Final Exam- Friday 04/24, from 3:30-5:30 pm (the location will be announced)

Project: Semester project (**assigned on 1/31**, topics will be posted on Canvas and you must print and read the handout; **due date on 04/03**)

Final Exam (comprehensive/departmental): **Friday, April 24th (Friday) 3:30-5:30 pm**

This date and time is assigned by the Univeristy of Utah scheduling office.
You can view the Spring 2020 final exam schedule at (math 1030 is listed under the departmental finals): http://registrar.utah.edu/academic-calendars/final-exams-spring.php

The final exam will not be in our regular classroom. The scheduling office will let me know about the final exam location in advance and I will make an announcement in class, on Canvas , and send you an email (to your Umail address) during the last few weeks of the semester.

Students are not allowed to take early/late departmental final exam. Please do not schedule your trip before this date, or do not ask me to give you extra time to study.

Grading Policy: Your grade will be based on:

Quizzes (5 best)	20%
Group Project	20%
Exams (2 exams)	30% (15% each)
Final exam	30%

Course Grades (Evaluation methods and criteria):

Your final letter grade will be determined by your overall percentage as follows:

A	93% - 100%	C+	77% – 79.9%	D-	55% - 59.9%
A-	90% - 92.9%	C	73% – 76.9%	E	below 55%
B+	87% - 89.9%	C-	70% – 72.9%		
B	83% - 86.9%	D+	65% – 69.9%		
B-	80% - 82.9%	D	60% – 64.9%		

Calculators: You will need a calculator for this course. A scientific calculator will be sufficient. You are required to bring the calculator to every lecture/exam since I do not provide the calculator for students. You are not allowed to use your cell phone as a calculator.

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 Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS 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 Services.

Safety Statement: The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

Crisis Services Center: This center offers services Mo-Fr 8 am – 5 pm. f you would like to talk to one of the staff members, please call 801-581-6826 ot walk into the Center at 426 Student Services Building (SSB). For more ugent situations and after hours, please go to the Univeristy Neuropsychiatric Institute (UNI), 501 Chipeta Way, ot to the Emergency Department at the University Hospital.

UNI Crisis Line: 801-587-3000 offers crisis response 24/7, including: crisis support over the phone, a mobile outreach option (MCOT) that will respond to persons in their home, and the Receiving Center where individuals from Salt Lake County can access a safe and supportive environment to help individuals work through their crisis situation. Individuals may spend up to 23 hours at the Receiving Center, at no cost.

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).

Student Names and Personal Pronouns statement: Class rosters are provided to the instructor with the student's 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 UID 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.

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.

Important Dates:

- last day to add without a permission code – Friday, January 10th
- last day to add, drop (delete), elect CR/NC, or audit classes – Friday, January 17th
- last day to withdraw from classes – Friday, March 6th

All important dates can be seen at: http://registrar.utah.edu/academic-calendars/spring2020.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 Fall/Spring semester are: 8 am – 8 pm Monday-Thursday and 8 am – 6 pm on Friday. The tutoring center will open the first week of classes. Tutors are there to help you understand the material, not to do the homework for you. Please be aware that there are many tutors with a variety of teaching styles and it may take you a few tries to find the tutor that works best with you.

Classroom Etiquette: Please turn off your cells phones while you are in class. During lectures, if your cell phone rings or you are texting, you will be asked to leave. During the exam/quiz if your cell phone rings/vibrates points will be deducted (5 points from on the quiz and 10 points on the exam) I do not tolerate talking during lectures. If you have an emergency, you are more than welcome to step out to make a call or talk to someone.

Changes to the syllabus: I reserve the right to change the syllabus as circumstances necessitate, but no new policy will be enforceable until after you have been notified in class.

DAILY SCHEDULE OF LECTURES FOR MATH 1030 (section 6) - TENTATIVE

This is a tentative schedule. Any changes will be announced in class. If you miss a class it is your responsibility to find out what was covered.
The quiz and test dates are given and those dates will not change. The material that you will be tested on is subject to change (depending if we are on schedule or not).

WEEK	LECTURE	SUGGESTED PROBLEMS
#1 1/6 -1/10	1: Intro to the course 2: **Quiz A (pre-test)** 3: 1C – Sets and Venn Diagrams	 p.36: Quiz (all odd), Exercises 27-73 odd
#2 1/13 – 1/17	1: 1C (cont.), 1D – Analyzing Arguments 2: 1D (cont.); 3: 2A – Working with Units	 p.52: 15-35 odd p.87: 7,9,11, 21-47 odd,55-79 odd, 83,85
#3 1/20 – 1/24	1: Martin Luther King Jr. Day Holiday 2: **Quiz #1** (1C, 1D); 2A (cont.) 3: 2B –Problem Solving with Units	 p.99: 13-39 odd, 51, 57
#4 1/27 – 1/31	1: 2B (cont.) 3A – Uses and Abuses of Percentages 2: 3A (cont.) 3: **Quiz #2** (2A, 2B); 3B – Putting Numbers in Perspective	 p.131: Quiz (all odd); p.132: 7-15 odd,49, 51-73 odd,81,82,95,97,99,103,105 p.148: 15,17,29-39 odd49,51,55,57,61,63 **Project topics posted on Canvas –** (must read and print this handout)
#5 2/3 – 2/7	1: 3B (cont.) Topics for Project and discussion on format/expectations 2: 3C – Dealing with Uncertainty 3: 4A – Taking Control of your Finances; 4B – The Power of Compounding	 p.160: 35-57 odd p.194: 13-57 odd
#6 2/10 – 2/14	1: **Quiz #3** (3A-C); 4B – The Power of Compounding 2: 4B (cont.) List of names for Project due 3: Review (for Exam #1)	***start working on the exam #1 Review*** p.214: 51-93 odd
#7 2/17 – 2/21	1: Presidents' Day Holiday 2: **EXAM #1** (1C-D, 2A-B, 3A-C, 4A-B) 3: 4C – Saving Plans and Investments	 p.233: 9-37 odd, 57, 63

NOTE: *Exam Reviews will be posted on Canvas.*

#8 2/24 – 2/28	1: 4C (cont.) 2: 4D – Loan Payments, Credit Cards and Mortgages 3: 4D (cont.)	p.250: Exercises 7-49 odd
#9 3/2 – 3/6	1: 8A – Linear Vs. Exponential Growth 2: **Quiz #4** (4C-D); Class time for Project (in groups) 3. 9A – Functions: Building Blocks of Mathematical Models	p.479: 5-25 odd p.523: Quick Quiz 1-9 odd, Exercises 5-29 odd
SPRING BREAK (March 8 - March 15)		
#10 3/16 – 3/20	1: 9B – Linear Modeling 2: 9B (cont.) 3: 8B – Doubling Time and Half-Life	p.536: Quick Quiz 1-9 odd, Exercises 1-47 odd p.490: Exercises 25-61 odd
#11 3/23 – 3/27	1: 8B (cont.) Class time for Project (in groups) 2: **Quiz #5** (8A, 9A, 9B); 3: 9C – Exponential Modeling	 p.550: Exercises 1-49 odd
#12 3/30 – 4/3	1: 9C (cont.) Class time for Projects (in groups) 2: More examples on 8B/9C; **Quiz #6** (8B/9C); 3: **Projects due in class;** 8C – Real Population Growth	 ***start working on the exam #2 Review*** p.500: Exercises 13-31 odd
#13 4/6 – 4/10	1: Review (for Exam #2) 2: **EXAM #2** (4C-D, 8A-C, 9A-C) 3: 10A – Fundamentals of Geometry	 p.567: Quick Quiz 1-9 odd, Exercises 11-61 odd, 62-71 all, 75, 77
#14 4/13 – 4/17	1: 10A (cont.); 2: 10A (cont.); 3: **Quiz #7** (10A); Review (for Final)	
#15 4/20 – 4/24	1: Review (for Final) 2: Reading Day (No Class)	

FINAL (Departmental/Comprehensive)
April 24th (Friday)
3:30-5:30 pm

Note: If there is a location change for the final, I will make an announcement in class and on Canvas during the last few weeks of the semester.