SYLLABUS – Summer 2021

MATHEMATICS 1030

Introduction to Quantitative Reasoning(3 credits)

CLASS HOURS: Mon-Thu 10:00AM-11:30AM June 28th-August 4th

This is a remote learning class, where instruction will take place during the time listed in the online schedule. Students will join remotely for a learning experience that takes place together using technology.

INSTRUCTOR: THUONG NGUYEN

Office: JWB 332. Email: tnguyen@math.utah.edu

Quiz/exam solutions, grades, any reviews and other handouts will be posted on Canvas.

Video lectures are available through the Departmant of Mathematics. http://www.math.utah.edu/lectures/math1030.html

OFFICE HOURS: There will be two online office hours each week. No appointment is necessary to come to office hours.

- Mondays 2:00-3:00 pm.
- Thursday 2:00-3:00 pm.

Online office hours will be held in Zoom. A link will be posted and/or sent out in Canvas. You can connect by internet or by phone.

ADDITIONAL ONLINE MEETINGS: If the times above are not convenient for you, contact me about setting up an online meeting or office hour at an alternative time. I am most available on Friday mornings or afternoons, but can find other times too.

REQUIRED COURSE MATERIALS

For both quality learning and proctored testing, you are required to have access to the following equipment:

- **internet** (in order to access course materials and take exams);
- a **webcam on your computer or camera on your phone** (this is necessary for taking exams in Zoom; it is useful for online meetings);
- a **scanning device** (smartphones can be used as scanning devices) which is different than the device you are using for your camera;
- A four-function or scientific **calculator** (you can use a graphing calculator; you can not use a phone or computer ap when doing exams).

The following are recommended, but not required:

- a **microphone** (used for online meetings);
- a **printer** (if you don't have one, you will need to make hand-written templates);

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

Through the inclusive access program, you will have access to an e-book version of the course text, **Using & Understanding Mathematics, A Quantitative Reasoning Approach**, by Bennett and Briggs, Custom edition for University of Utah (taken from 6th edition) and the online homework site, **MyLab.** Inclusive Access is a program between the publisher and the UofU where the cost of your course materials is added to your tuition bill. This program reduces the cost of course materials for students because the purchase is made in bulk for all students in a course, rather than individually. The cost is $58.85.

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 OR ACT Math score of 19 or better OR SAT Math score of 500 or better. When entering 1030, you should already 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.
Going Forward: Math 1030 does not satisfy a Math 1050 or Math 1090 prerequisite.
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.

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.

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

RESOURCES TO HELP YOU:

Contacting me by my e-mail, coming to online office hours, or setting up an appointment is the first way to get help. I am happy to talk about individual problems, mathematical concepts, or help you make a study/learning plan. Please seek help early in the term.

CANVAS DISCUSSION BOARDS

- Please post questions and answers. Your classmates are often the faster and most knowledgeable people to respond! If something is urgent, send me an e-mail too.

TUTORING HELP

- **UofU Math Tutoring Center ("drop-in" online tutoring).** The math center offers online tutoring. You can find more information here: https://utah.instructure.com/courses/613503/
- **UofU Learning Center (fomerly ASUU Tutoring; offers subsidized one-on-one tutoring)** The Learning Center offers three free tutoring sessions per student per semester. Additional hours can be purchased after that. Scholarship assistance also available. Here is a link to more information: https://learningcenter.utah.edu/

MyLab HELP

- Contact MyLab customer support (search the internet under "MyLab/Pearson customer support" for contact detail) if you have issues with the online platform. If MyLab/Pearson representatives are not able to assist, e-mail your instructor with a description of the problem and the case number.

EQUIPMENT HELP

- The UofU has a laptop and mobile hotspot loan program – laptops, mobile hotspots mailed to current U students on a first-come, first-served basis. You can find out more information about this through this link: https://union.utah.edu/covid-19/

GENERAL HELP, IN PARTICULAR IN LIGHT OF COVID-19

Here is information from the University about logistics in light of COVID-19. There is also information about financial assistance, councelling, the food pantry, and much more. https://coronavirus.utah.edu/#students

WEEKLY WORKLOAD:

This is a second haft section course, which is extremely intense course. According to the University of Utah, a 3-unit course should have about 6 hours of lecture per week and 14-20 hours of outside study/homework time. This means that for this remote course, will take the average student about 20-26 hours per week. Some students will be able to get by on less, and some student will need more.

Each week, we cover specific sections. You can choose when you work on the material in the week, keeping your objective and topic goals in mind, but you can't complete the course at your own pace.

COMMUNICATION EXPECTATIONS IN AN ONLINE COURSE:

Most course announcements will be posted in announcement quizzes on Canvas. You are expected to take the course information quizzes at the start of the course, the weekly quizzes on Tuesday and Thursday, and the exam-related quizzes when posted. In between announcement, I will send updates and reminders by e-mail in Canvas. You should check your Canvas mail **everyday**,

IMPORTANT DATES:

Weekly Due Dates (See late policy later in Syllabus):

- Online HW due each Tuesday at 11:59pm (include HW given from Monday to Thursday last week)
- Quizzes: You have about 2 quizzes per week on Tuesday and Thursday
  - Tuesday quiz: due every Friday night at 11:59pm in Canvas
  - Thursday quiz: due every next Monday night at 11:59pm in Canvas

Exams (Schedule at a time between the dates below):

- Exam 1: **Mon 07/19** class time 10:00AM-11:30AM
- Exam 2: **Tue 08/03** class time 10:00AM-11:30AM
- Project Due Date: **Mon 08/02 11:59pm**
- **Final: Thursday 08/05 10:00 AM – 12:30 PM**. This time is assigned by the University of Utah. You can see more details from this link. https://registrar.utah.edu/academic-calendars/final-exams-summer.php

However, I added 40 minutes for the final exam because I want to give you time for submitting the work and check in. The details can be seen in the structure of this course section.

- Students are not allowed to take early/late departmental final exam.

Other dates:

Last day to add, drop (delete), elect CR/NC, or audit classes: Thursday, July 1

Last day to withdraw from classes: Friday, July 16

Last day to reverse CR/NC option: Friday, July 30

THE STRUCTURE OF THE COURSE

Each week, we cover specific sections. You can choose when you work on the material in the week (as long as you meet deadlines), but you can not complete the course at your own pace, as there are specific due dates throughout the semester.
Here is a breakdown of the components in the course:

- **Join class time by Zoom:** Every week, on Monday, Tuesday, Wednesday and Thursday, we will have class from 10:00 am – 11:30 am. The link for lectures will be the same every time. You will join class (and office hours) using the Zoom feature on your Canvas. I require that all students turn their video on (I need to be able to see you), and the audio off (unless you have a question, or we are discussing the concept and you are participating). When attending class use the same name as it appears on Canvas.

You can join any time after 9:45 am, I will be there to answer questions. However, our class starts at 10:00 am.

Attending class does not count towards your grade, but attending class will directly help you with learning and therefore help your grade. You will greatly benefit from attending lectures, or any part of the lecture.

In case I need to check the attendance, Zoom has a function, "Attendance", that tracks all participants, their time of arrival and departure.

All Zoom lectures will be recorded and available **for 30 days** after it has been recorded. The link to the recording will be available in "Cloud Recordings" in Zoom (on Canvas).

- **Read** from your **e-textbook.** There will be a link/tab on our class Canvas page, along with the homework platform (go to "MyLab and Mastering" feature on Canvas. To read the book, look for "Chapter Contents" link on the left).

- **Read Announcements/ Class Information on Canvas:** All important information regarding this course is included in "Course Information" and "Announcements". Frequent informational quizzes will be given almost every week under "Quizzes" feature. These "quizzes" will be labelled as "A: 'Title of the Quiz' " (for example, A: Quiz A3) in Canvas. Completing these quiizes is **worth 3%** of your semester grade. Due dates will be shown. These quizzes are open for a week, and will open each Monday at 6 am and close a week later (the following Monday) at 8 pm. You have unlimted number of attempts for these informational quizzes. The lowest 2 informational quiz scores will be dropped at the end of the term.

- **Online Homework:** The homework due dates are given in your Daily Schedule document. Please plan ahead of time!

The homework is given through MyLab and Mastering. Working through problems helps you understand and master the material. Completing homework is **worth 11%** of the

grade. The scores are imported to Canvas. There are total of 9 homework assignments thrughout the semseter and 2 lowest assignment scores are dropped at the end of the semester. The due date will be assigned (due at 11:59 pm on every Tuesday), however, you will be able to continue working on the assignments after the due date with a penalty of 30% on problems submitted after the due date. All homework assignment submissions will close on the day of the Final Exam (Thursday, August 5th) at 8 pm.

- **Quizzes:** The quiz dates are given in your Daily Schedule document. Please plan ahead of time!

The quizzes are **worth 11%** of your grade. These quizzes are material/content quizzes and these are different than your announcement quizzes. You must write all your work on a template that I will provide for you many days in advance. These templates will be posted on Modules of the testing weeks on Canvas; you will print it in advance and use it for the Quiz. Each Quiz will have a different template. You must follow the given directions carefully. Once you scan all your work, you will save it as a single .pdf file and upload it on Gradescope. If your file does not follow the given template, Gradescope will let you know and will not accept your submission until you submit the correct template.

There are 7 quizzes throughout the semester. **Make-up quizzes are not allowed.** However, the lowest 2 quiz scores will be dropped at the end of the term.

You have about 2 quizzes per week on Tuesday and Thursday. Quizzes will be taken home. The questions will be available on Canvas before 10am on the quiz dates.

- Tuesday quiz: due every Friday night at 11:59pm.
- Thursday quiz: due every next Monday night at 11:59pm

- **Project:** This project an in-depth 8-12 page paper in which you implementing some of the mathematics of the course. The project is **worth 15%** of your grade . You will have the option to choose your topic and your group. The project will be due on **Monday, August 02nd** (due by 6 pm, submitted on Canvas). The list of topics is already posted ("Files" tab, "Project" folder, and you will work in groups of about 3 students on a topic that you select from the list. We will discuss the format and expectations for this project before you start working on it. The group sign up will be available on Canvas (due on **Thursday, July 08th, 8 pm**). Late projects are accepted with a penalty of 10 percent for each time the class meets and the group does not turn in the project. If it is turned in on Tuesday, August 03rd, 10 percent is deducted; if it is turned in on Wednesday, August 4th, 20 percent is deducted, etc. You must inform me in advance if you are planning to turn in your project late.

- **Exams:** There will be two midterm exams, **each worth 20% (total of 40%)** of your grade. Exam questions will be given/posted on Canvas through "Files" tab ("Exams" folder, "Exam questions" sub-folder) or "Modules", and will be proctored through Zoom during class time, 10:00 am – 11:40 am. Those files will only be visible and will open at 10:00 am on the day of the exam. For the exams you will

need a camera (most computers have the camera or phone camera is ok) and a separate device for scanning. You will be scanning all your work in a format/templete that I will provide (a leaat 1 week before the exam) and you will upload your completed work to Gradescope (platform used for grading and returning your graded exams). The week before the first exam I will have a couple of extra Zoom times (in addition to my office hours) set up, so that you can attend and practice what you need to do for the exam.

You are allowed to use a scientific or graphing calculator. You will also be allowed to use one regular size 8.5" by 11" piece of paper where you can write on both sides any information you would like. You are not allowed to use your pohone, or any computer or online resources (including math sites and online calculators), notebooks or books, or to communicate about the exam with other humans. Not following these rules is considered academic misconduct and will be penalized as such. See further comments about academic misconduct below.

Exam 1: **July 19th** (Monday),
Exam 2: **August 03rd** (Tuesday)

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. 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.

- **Final** (comprehensive/departmental) Exam: The final exam is comprehensive and **worth 20%** of your grade. It will be given on Zoom, the same way as your exams. You will print the template that I will provide, and use the last 5-10 min of the exam to scan your work and upload to Gradescope.

Final Exam: **08/05 10:00am-12:30am** (on Zoom, proctored)

This date and time is assigned by the Univeristy of Utah scheduling office.
You can view the Spring 2021 final exam schedule at (math 1030 is listed under the departmental finals): https://registrar.utah.edu/academic-calendars/final-exams-spring.php

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.

INCOMPLETE (I grade): University policy allows assignment of a grade of incomplete (I) if 80% or more of the course work has been completed. I will consider assigning an "incomplete (I)" only under EXCEPTIONAL circumstances unrelated to academic performance, and only if a student is passing the course with a C or better when the "Incomplete" is requested.

CREDIT/NO CREDIT OPTION: This is the official University description of the credit/no credit option: "The credit/no credit (CR/NC) option allows a student to enroll in selected courses outside of his/her academic plan, without the pressure of competing for a letter grade. By electing CR/NC, students are expected to complete the same work as students enrolled for letter grades."

Please keep the following in mind when making a decision:

- If you opt for CR/NC, your instructor still assigns you a course grade, but then the registrar switches it to be CR if the grade is a C- or higher and NC for grades that are a D+ or lower.
- If you are taking Math 1030 to meet the QA general education requirement, a grade of CR will fill the QA requirement, but a grade of NC will not. However grades of D+/D/D- will fill the requirement. So, with this class, although a CR/NC grade may be better for the GPA, a student might prefer the D+/D/D- grade to fulfill the requirement.
- If you are taking Math 1030 to meet a major or minor requirement, then you should opt for a letter grade, rather than credit/no credit (CR/NC).
- If you are taking Math 1030 as a prerequisite, it is easiest if you opt for a letter grade. You need a C or better to enroll in most subsequent courses. But if you choose to take Math 1030 CR/NC, when you want to enroll in the subsequent class, you will need to request a permission code. The permission code team will look up whether the underlying grade meets the requirements.

If you are uncertain about what choice to make, speak with an academic advisor to review your situation and discuss the options.
You can read about grading policies here: https://catalog.utah.edu/#/policy/B12v3LX0G?bc=true&bcCurrent=Grading%20Policies&bcGroup=Grade%20Information&bcItemType=policies

ACADEMIC MISCONDUCT

Students are encouraged to review the Student Code for the University of Utah: https://regulations.utah.edu/academics/6-400.php
In order to ensure that the highest standards of academic conduct are promoted and supported at the University, students must adhere to generally accepted standards of academic honesty, including but not limited to refraining from cheating, plagiarizing, research misconduct, misrepresenting one's work, and/or inappropriately collaborating. A student who engages in academic misconduct as defined in Part I.B. may be subject to academic sanctions including but not limited to a grade reduction, failing grade, probation, suspension or dismissal from the program or the University, or revocation of the student's degree or certificate. Sanctions may also include community service, a written reprimand, and/or a written statement of misconduct that can be put into an appropriate record maintained for purposes of the profession or discipline for which the student is preparing.
Cheating and plagiarism are serious offenses and can result in getting a zero on the assignment, failing a class, a note in your record or being expelled. Please know that looking at someone else's exam is cheating and will be dealt with seriously as stated above. By accepting admission to the University you have agreed to abide by the University rules provided to you in the student handbook.
Incidents of academic misconduct (e.g. cheating, plagiarizing, misrepresenting one's work, and/or inappropriately collaborating on exams) will be subject to penalty per Section V of Policy 6-400, the Student Code. Incidents of academic dishonesty on homework assignments will result in a minimum penalty of a full letter-grade reduction and up to a failing grade (E) for the course. Incidents of academic dishonesty on exams will result in a minimum penalty of a failing grade (E) for the course, and the incident(s) will be referred to the dean of your major-department college for possible further sanction.

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.

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.

DISCLAIMER:

The instructor reserves the right to modify this syllabus to better suit class needs at any time during this semester. Any changes that are made will be immediately communicated during class and via Canvas.

DAILY SCHEDULE OF LECTURES FOR MATH 1030 SUMMER 2021 -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.

##Week 1: 06/28 - 07/01

06/28: Introduction - 1C Sets and Venn Diagrams

06/29: 1C Sets and Venn Diagrams

06/30: 1D Analyzing Arguments

07/01: **quiz 1(1C-1D)** 2A Working with Units

Week 2: 07/05-07/08

07/05: Holiday

07/06: **quiz 2 (2A-2B)** 2B Problem Solving with Units

07/07: 3A Uses and Abuses of Percentages

07/08**: quiz 3 (3A-3B)** 3B Putting Numbers in Perspective -3C Dealing with Uncertainty

Week 3: 07/12-07/15

07/12: 4B The Power of Compounding

07/13: **quiz 4 (3C, 4B)** 4C Saving Plans and Investments

07/14: 4D Loan Payments, Credit Cards and Mortgages

07/15: **quiz 5 (4C-4D)** Review for exam 1

Week 4: 07/19-07/22

07/19: **Exam 1 (1->4D)**

07/20: 8A Linear Vs. Exponential Growth

07/21: 9A Building Blocks of Mathematical Models

07/22: **quiz 6 (8A,9A,9B)** 9B Linear Modeling

Week 5: 07/26-07/29

07/26: 8B Doubling Time and Half-Life

07/27: **quiz 7 (8B,9C)** 9C Exponential Modeling

07/28: 10 Fundamentals of Geometry

07/29: Review Exam 2 - Group Meeting

Week 6: 08/02-08/04

08/02: Review Exam 2 (Review Final Exam- topics 8, 9, 10**)**

08/03: **Exam 2 (8,9,10)**

08/04: Review Final Exam (topics 1-4**)**

08/05 10:00am-12:30am: Final Exam