

Math 107: Quantitative Reasoning

Fall 2024 – Section 3

Class meeting: M, W, F: 10 - 10:50 AM at SCB 304

Instructor: Dr. Tuan Pham

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Office: SCB 316, telephone: 808-675-3044

Office hours: M, W, F 12:00-1:30 PM or by appointment

Canvas: <https://byuh.instructure.com/courses/1479729>

Course website: <https://web.engr.oregonstate.edu/~phamt3/Courses/F24-Math-107>

Prerequisite: none.

Credit hours: This 3-credit hour course approximates one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately 14 weeks.

Textbook: “*Using and Understanding Mathematics*”, 8th Edition by Bennett and Briggs. Pearson’s MyLab Math access is required. You can sign up through Canvas.

This class will be participating in Inclusive Access this semester. “Inclusive Access” is the course content solution that is giving you access to the eBook and/or course materials on the first day of school at a lower price. To access the eBook and/or course materials, go to Canvas, click on VitalSource Bookshelf. From there you are able to access the eBook and/or coursework. If you have already purchased your book and don’t need access to the eBook and/or coursework, please be sure to opt out. The deadline to opt-out and avoid your student account being charged is 14 days after the first day of school, after which refunds will not be provided. This charge will be listed on your student account as a “digital fee” with the course name. The price of your course materials will sent to you directly in a separate email. If you have any questions or concerns, regarding Inclusive Access, please contact the textbook manager at textbooks@byuh.edu.

Course description: You will explore the real-world applications of mathematics in various fields such as logic, finance, statistics, probability, and more.

Learning Outcomes: Upon successful completion of this class, a student will be able to:

1. Apply fundamental concepts of mathematical logic, including propositions, sets, and argument analysis;
2. Demonstrate critical thinking skills using numerical data, such as percentages, and recognize potential deception in real-world scenarios;
3. Analyze and solve financial problems involving compound interest, savings, and loans;
4. Employ statistical reasoning techniques to interpret tables, graphs, correlations, and causality;
5. Summarize and characterize data using measures of central tendency (mean, median, mode), dispersion (range, standard deviation), and the normal distribution;
6. Calculate basic probabilities and understand the concepts of combining probabilities, the law of large numbers, and counting principles;
7. Develop mathematical models using linear and exponential functions to solve real-world problems;
8. Explore the applications of mathematics in interdisciplinary contexts such as music/arts or voting systems (optional topics).

Course goals: The course goal is to help students achieve the following learning outcomes. The table below indicates which outcomes will be addressed in Math 107. Program learning outcomes are not discussed because this class is not part of the math major program.

Student L.O.	Institutional L.O.
This course will extensively address knowledge of logical fallacies, mathematical logic and reasoning, earning interest, loans, national finances, probability models, data gathering, inferential statistics, proportional statistics, and other subjects [high priority]	Knowledge
Students will be required to locate, evaluate, and use examples of logical and mathematical applications. Also, demonstrate critical thinking when presented with information, making judgments about the relevance and reliability of reported mathematical or logical statements. [high priority]	Inquiry
The work in this class is primarily focused on analyzing problems mathematically and examining solutions. Mathematics is fundamentally an analytic tool, and one of the most useful. [high priority]	Analysis
All math students need the ability to properly communicate both the conclusions that can be reached from their work, and the methods and procedures that were used to arrive at those conclusions. Clearly expressing these graphically and in writing is assessed. [high priority]	Communication
Some applications of the use of mathematics involving ethical questions will be discussed. Also, students are to behave ethically in the class related activities. [medium priority]	Integrity
Some examples of mathematical applications involving care of our resources are given. Also, students are expected to manage their time effectively in order to complete assignments and prepare for and take exams. [medium priority]	Stewardship
While little is done directly to assess service, it is expected that the skills developed in this class will enhance the abilities of students to provide service to their communities in the future. [low priority]	Service

Grading components:

Homework: 25%

Attendance: 5%

In-class quizzes: 10%

Chapter quizzes: 10%

Midterm 1: 15%

Midterm 2: 15%

Final exam: 20%

There will be opportunities for extra credit during the course.

Evaluation:

- **Homework:** all homework assignments are given (and automatically graded) through MyLab Math. They are to be finished by the posted dates on MyLab Math. You may redo homework questions as many times as you want until perfect before the due date. You will lose 20% of the score per day on the questions scored after the due date.

- **Attendance:** after the deadline for dropping the class, the instructor will check attendance every day of class.
- **In-class quizzes:** quizzes will be given in class each Friday. These quizzes are to test students' understanding of recent topics.
- **Chapter quizzes:** Chapter quizzes are assigned for each chapter and to be done through MyLab Math. You may redo chapter quizzes as many times as you want until you get a perfect score before the due date.
- **Exams:** there will be two midterm exams and one final exam. Each exam will be done in class through MyLab Math. You must bring a laptop. See the class schedule for the dates of those exams. Links to access each exam can be found on the home page of the course on Canvas. The final exam will be from 11:00 AM to 1:50 PM on **Wednesday, December 11, 2024** at the regular classroom (SCB 304).

Make-up work and due-date extension: make-up exams will be given only in exceptional circumstances, with appropriate documentation, such as illness or family emergency. If possible, notify the professor as soon as you are aware of the issue. Extension of due dates for assignments may be considered under similar conditions.

Grade lines: the course grade lines will not be harder than the standard grade lines: A 100-93%, A- 92.99-90%, B+ 89.99-87%, B 86.99-83%, B- 82.99-80%, C+ 79.99 - 77%, C 76.99-73%, C- 72.99-70%, D+ 69.99-67%, D 66.99-63%, D- 62.99 - 60% and F < 60%.

Other Learning Resources:

- The instructor has office hours dedicated to help you. Don't hesitate to make an appointment if the office hours conflict with your schedule.
- Your fellow classmates are also a good resource. Form a study group and you will find it helpful.
- You can find peer tutors at the Math Lab, located in SCB 302. Online tutoring is also available. Check out their hours here: <https://mc.byuh.edu/math-lab>.

Student Academic Grievance policy:

Students, who feel that their work has been unfairly or inadequately evaluated by an instructor, are encouraged to pursue the matter as an Academic Grievance by following the steps found in the Academic Grievance policy at <https://catalog.byuh.edu/policies-procedures/grievances>.

Final Exam Schedules: Final exams are to be offered on the specific day and time as determined by the official final exam schedule. Students must plan travel, family visits, etc., in a way that will not interfere with their final exams. Less expensive air fares, more convenient travel arrangements, family events or activities, and any other non-emergency reasons are not considered justification for early or late final exams.

Honor Code: The Honor Code exists to provide an education in an atmosphere consistent with the ideals and principles of the Church of Jesus Christ of Latter-day Saints. Students, faculty and staff are expected to maintain the highest standards of honor, integrity, morality, and consideration of others in personal behavior. Academic honesty and dress and grooming standards are to be maintained at all times on and off campus. For specific information see <http://honorcode.byuh.edu>.

Discrimination: The University is committed to a policy of nondiscrimination on the basis of race, color, sex, pregnancy, religion, national origin, age, disability, genetic information or veteran status in admissions, employment or in any of its educational programs or activities. For specific information see the non-discrimination policy at <https://policies.byuh.edu>.

Title IX and Sexual Misconduct: The University will not tolerate any actions proscribed under Title IX legislation, specifically sexual harassment, sexual violence, domestic or dating violence or stalking perpetrated by or against any university students, university employees or participants in university programs. For specific information see <https://titleix.byuh.edu>. All faculty and staff are deemed responsible reporting parties and as such mandated to report incidents of sexual misconduct including sexual assault to the Title IX.

Title IX Office
Lorenzo Snow Administrative Building
55-220 Kulanui St.
Laie, HI 96762
Office Phone: (808) 675-4585
E-Mail: titleix@byuh.edu

Accommodating Students with Disabilities: Disability Services is dedicated to assisting students with disabilities by providing opportunities for success and equal access at Brigham Young University-Hawaii. We are committed to coordinating reasonable accommodations as outlined by Federal and State law. To learn more about available supports, go to <https://disability.byuh.edu>, call (808) 675-3518 or go to McKay Building 181 across from the Cafeteria. You may also email disabilityservices@byuh.edu with questions. For Canvas Accessibility Issues, please fill out this online form https://titanium.byuh.edu/Titanium_Disability_Intake.

Mental Health Resources: As a college student, there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily life. If you or someone you know is experiencing mental health challenges at BYUH, please contact Counseling Services at (808) 675-3518. Services are free and confidential. For more information, visit <https://counseling.byuh.edu/>. Free mental health self-help resources are available through TAO Connect. To access them, simply go to <https://us.taoconnect.org/register> and sign in using your BYUH email address. In a crisis situation, or after hours, please contact BYUH Campus Safety at (808) 675-3911 or call 911 if you are off campus. You can also call the 24-hour crisis hotline at 1-800-753-6879 or contact the Crisis Text Line at 741-741.

Report a Concern: If you have a concern to report go to <http://about.byuh.edu/reportaconcern>. If you have reason to believe a student or dependent of a student is a danger to self or others please do one of the following depending on the urgency of the situation:

- a. Call 911,
- b. Call BYU-H Public Safety (675-3911),
- c. Report a concern to the Behavior Intervention Team.