

# SYLLABUS

FALL 2018

MATHEMATICS 1040 (Section 1)

## Introduction to Statistics and Probability (3 credits)

10:45 am – 11:35 am MWF JFB 102

**Textbook:** Elementary Statistics: Picturing the World, by Ron Larson and Betsy Farber (Third custom edition for University of Utah, taken from the sixth edition)

ISBN-10: 1-269-89815-9

ISBN-13: 978-1-269-89815-7

A. The least expensive option for the book is to buy it through the Inclusive Access Program. An email will go out to math 1040 students prior to the first day of class with information on what Inclusive Access is and instructions on how to access their digital course materials. If students decide they don't want the instant access to the course materials they 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 they OPT OUT during the first two weeks of class they will receive a full refund of the course material cost. They will then be responsible for obtaining their 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 1040 access is \$41.80.

B. If a student wishes to order a hard copy of the book, they 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/elementary-statistics-ron-larson-v9780321900845>

The current cost for math 1040 book is \$44.99 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 1040 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.

**You are required to print and bring to every lecture the handout available on Canvas (under "Files"). We will start using this handout the second week of the semester.**

**Instructor:** Aleksandra Jovanovic-Hacon; office JWB 204  
e-mail address : [ahacon@math.utah.edu](mailto:ahacon@math.utah.edu)

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

**Office hours:** Monday: 8:40 am- 9:30 am  
Wednesday: 8:40 am – 9:30 am  
Friday: 11:45 am – 12:45 pm

**Prerequisites:** Prerequisites: "C" or better in Math 1010 (Intermediate Algebra) or Math 1030 (Introduction to Quantitative Reasoning) or Accuplacer CLM score of 50 or better or ACT math score of 22 or better or SAT Math score of 550 or better.

This means that you should be able to manipulate variable expressions, work with simple linear equations and graphs, work with fractions and exponents.

(Note: Math 1040 does not satisfy a Math 1070 prerequisite.)

**Course objectives:** Math 1040 will fulfill the Quantitative Reasoning – Statistics/Logic (QB) general education requirement for graduation. This course addresses the following Essential Learning Outcomes: inquiry and analysis, critical thinking, oral communication, quantitative literacy and problem solving.

Math 1040 is the introductory statistics and probability course. We will learn how data is collected, organized, analyzed and interpreted, how to determine the probability that an event will occur, how to create and use probability distribution, how to recognize normal (bell-shaped) distributions and how to use their properties in real-life applications.

Statistics and probability are applicable to a wide variety of academic disciplines, from the natural and social sciences to the humanities, government and business.

The course is based on chapters 1 – 5, and sections 9.1 and 9.2. You are expected to read each section that we cover. We will also try to bring and analyze recent newspaper/magazine articles that describe the results of a statistical study.

For every hour of lecture, the university requires/suggests that you invest 2-3 hours of additional work (every week). For this 3 credit hour class, it means that 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:

- recognize different ways of collecting data and decide what method would be the best for a given situation
- distinguish between various sampling techniques and decide what sampling technique would work the best in a given situation
- use different tables and graphs to organize and analyze data
- calculate the mean, median, mode, range, quartiles, interquartile range, outlier(s), find percentile that corresponds to a value and interpret the results in variety of ways
- find the z-score (the standard score) and compare the z-scores from different data sets
- find the mean, variance and standard deviation; interpret standard deviation using Empirical Rule (68-95-99.7 rule) for the bell-shaped distribution; interpret standard

deviation in connection with a distribution that is not bell-shaped or it is unknown using Chebychev's Theorem; find the standard deviation for grouped data (using classes and midpoints)

- determine the probability of an event using the Fundamental Counting Principle, conditional probability, the multiplication rule, and the addition rule
- create and use probability distributions; find the mean and standard deviation
- recognize a binomial experiment and calculate the binomial distribution using the Binomial Probability Formula
- recognize normal (bell-shaped) distribution and standard normal distribution; calculate the areas/probabilities using the standard normal distribution table
- use the standard normal distribution table to find probabilities or values in connection with real-life applications
- explain the meaning of different values of the correlation coefficient and relate the concept to the strength/weakness of linear relationship between two variables when examining different scatter plots
- find the equation of the regression line (line of best fit) and predict values using the equation of the regression line

**Homework:** Homework problems are assigned for each section. Homework will not be collected, but I strongly recommend that you do these problems.

**Quizzes:** Approximately every 2 weeks there will be a quiz covering the material that we have done. The problems will be very similar to the text or examples that we have done in class; or the assigned suggested homework problems. No make-up quizzes will be given (regardless of the reason), but the 3 lowest quiz scores will be dropped.

**Exams:** You will have 3 exams (50 minutes each). You MUST bring a valid ID to the exam. No make-up exams will be given, but the lowest exam score will be dropped. Please plan ahead of time.

The first exam is scheduled for September 26<sup>th</sup> (Wednesday), the second exam is scheduled for October 31<sup>st</sup> (Wednesday), and the third exam is scheduled for November 19<sup>th</sup> (Monday).

**Final Exam** (comprehensive): **Friday, December 14<sup>th</sup>, 10:30 am – 12:30 pm.**

This date and time is assigned by the University of Utah scheduling office. You can view the Fall 2018 final exam schedule at:

<http://registrar.utah.edu/academic-calendars/final-exams-fall.php>

The final exam will be in our classroom. If there is a location change, the scheduling office will let me know in advance and I will make an announcement in class during the last few weeks of the semester.

Students are not allowed to take early/late 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 (4 best quizzes). | 25%            |
| Exams (2 best exams)      | 40% (20% each) |
| Final exam                | 35%            |

**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.

**Important Dates:**

- last day to add without a permission code – Friday, August 24<sup>th</sup>,
- last day to add, drop (delete), elect CR/NC, or audit classes – Friday, August 31<sup>st</sup>
- last day to withdraw from classes – Friday, October 19<sup>th</sup>

All important dates can be seen at: <http://registrar.utah.edu/academic-calendars/fall2018.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 second week of classes.

**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.