

# STAT 341: Probability and Statistics – Autumn 2020

## Instructor Information:

Instructor: Anna Halfpap

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## Course Description:

Offered autumn and spring. Prereq., one of M 162, 172 or 182. Probability, probability models and simulation, random variables, density functions, special distributions, and a brief survey of estimation and hypothesis testing. Computer use integrated throughout.

## Learning Outcomes:

1. To understand basic probability, counting and combinatorial methods, and Bayes' Theorem.
2. To understand and use the Law of Large Numbers and the Central Limit Theorem.
3. To learn about models for discrete and continuous random phenomena and to apply these models to real problems.
4. To learn to simulate random phenomena in R or other computer language.

**Textbook:** *A First Course in Probability*, by Sheldon Ross. Any edition/format you choose to acquire is fine.

**Evaluation:** Your grade will be based on your performance on regular homework assignments (30% of your semester grade), two midterm exams (20% each), and a final exam (30%). The first exam will be given after roughly three weeks, and the second after roughly seven weeks. The final will be cumulative but will emphasize material covered after the second midterm.

**Calculators and Technology:** The questions asked on your exams will never require the use of a graphing calculator or any other technology. As such, graphing calculators are **not allowed** on exams. You may use a scientific calculator (i.e., one capable of arithmetic but not of plotting functions, performing numeric integration, etc.) on exams if you would like.

We will be learning to do some basic things in R, which is a high-level statistical programming language. The program for R is free to download online.

**Accommodation:** The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors and Disability Services for Students (DSS). If you think that you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please contact DSS in Lommassen 154. I will work with you and DSS to provide an appropriate accommodation.

**Academic Honesty:** All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the university.

**Student Conduct Code:** All students need to be familiar with the Student Conduct Code. The Code is available for review online; search for “Student Conduct Code” via the “A to Z Index” link on the UM home page, at present at the upper right corner.

**COVID-19 Modifications:** All students must comply with university health policy while in class. This means in particular that you must wear a mask every day. Should you be impacted by COVID and unable to attend class, I will work with you to ensure that you can view lectures (either live or recorded) virtually.