Course Overview.

The world is tremendously complex, making life exciting and unpredictable. We are surrounded by more data than we can possibly understand. Statistics is the study of the organization and interpretation of this data. At its best, statistics can be used to draw accurate conclusions from observed events. At its worst, statistics can lead to false expectations. This course is designed to give students the basic tools for literacy in the use of statistics, hopefully making life a little more predictable.

This course contains four major components:

- Descriptive Statistics - Graphical and Numerical Summaries of Data
- Probability - Randomness, Expectation, and Probability Distributions
- Inferential Statistics - Sampling, Estimation, and Hypothesis Testing
- Regression and Analysis of Variance

Text and Materials. The textbook that you will need for this course is Introduction to Probability and Statistics, by Mendenhall, Beaver, and Beaver (Fourteenth Edition), published by Brooks/Cole. You will also need a graphing calculator such as a TI-83. Other calculators may be acceptable, but you should speak with me to be sure.

Prerequisites. Only a basic mastery of high school algebra will be required, e.g. the ability to expand \((a + b)^2\), to cancel terms, and to graph functions using your graphing calculator. No calculus will appear in this course.

Course Format. The course meets MWF, for 50 minutes each day. Class will begin with a Q & A forum where I will attempt to clear up any confusion you may have. Please take advantage of this and come with questions prepared. We’re all in this together and don’t want to leave anyone behind. After the Q & A we’ll have a time of instruction that may include lecture, a handout, and/or time for small group work. Working on problems in class will give you a chance to identify things which may cause confusion on the homework and ask for clarification while we are all in the same room. There will be office hours available, and this can also serve as a place to work on problems in groups.

Communication. It cannot be stressed enough how essential communication is to succeeding in this course. After identifying topics that may be giving you trouble, please communicate this information to me. There’s no such thing as a bad or unwelcome question. Additionally, please communicate with each other. Collaboration can be essential to keep up with the material. Explaining concepts and examples to each other is a great way to learn. It is my goal to create a comfortable environment which is conducive for learning.

The Math Workshop. The Math Workshop is located in the Science Library in the main floor conference room. It is open most afternoons and evenings. There are always two staff
members on duty, who may be either experienced undergraduates or math graduate students. This is a drop-in tutoring service, available to all members of the Wesleyan community. Staff members provide a friendly, relaxed atmosphere while answering questions about mathematics. The workshop is a good place to go when you get stuck on your stats homework.

**Your Final Grade.** Your final grade in this course will be calculated according to the following:

- **Homework:** 30%
- **Midterms (3):** 45%
- **Final Exam:** 25% (Scheduled for 2-5pm on Wednesday, Dec 16th)

**Homework.** Each week a problem set will be assigned on Monday to be completed and handed in the following Monday at the beginning of class. In math courses in general, and statistics in particular, each course meeting will build on all the previous meetings. As we cover material from the book, you will be responsible for reading corresponding sections as well. The best method for reading a math textbook is to skim the section before class and try to understand which concepts might be difficult for you and why. This will help you have questions in mind when you arrive in class and will help you get the most out of class. After class, do an in-depth reading of the section and complete the related homework problems, then skim for the next day. You should expect to spend about 3-5 hours on each homework. Exercise numbers will be posted on the course moodle.

Collaboration on homework is strongly encouraged, but you should write up your own homework yourself, and it should be well written and readable. A list of “Answers” without supporting documentation is normally unacceptable. In other words, show your work. This will be good practice for writing solutions on the midterms and on the final exam. I am happy to answer questions in my office hours, and I encourage you to come if you are confused about anything. You will get the most out of this time if you attempt the homework first and come with questions already prepared. Late assignments will not be accepted without permission from the instructor obtained before the due date (with exceptions for reasons documented by a dean).

**Midterms.** There will be three 2-hour midterm exams, tentatively scheduled for Wednesday, Oct 7th, Wednesday, Nov 4th, and Wednesday Dec 2nd, each from 7pm until 9pm. Each midterm is worth 15% of your final grade. Understanding the homework problems and class lectures is the best form of preparation.

**Final.** There will be a comprehensive 3 hour final exam on Wednesday, Dec 16th from 2pm till 5pm. Understanding the homework problems and all the midterms is the best form of preparation.

**Honor Code.** Wesleyan has an honor code that all members of the community, both faculty and staff, are expected to uphold:

www.wesleyan.edu/studentaffairs/studenthandbook/standardsregulations/studentconduct.html

I expect that we will all abide by the honor code in this course. Collaboration on homework is permitted, but please do not use resources outside of me, your fellow students, and the textbook. Answers to odd-numbered problems are in the back of the book, but do not provide enough shown work to receive full credit. Collaboration on midterms and the final exam is not permitted.

**Course Accommodations.** It is the policy of Wesleyan University to provide reasonable accommodations to students with documented disabilities. If this applies to you please make an appointment with me as soon as possible so that appropriate accommodations can be made. You will also need to register with Disabilities Services.