MATH/STAT 209: Introduction to Statistical Modelling, Spring 2019

Tuesday, Thursday 12:00-13:15 MRC LL1
Tuesday, Thursday 13:30-14:45 MRC LL1

Instructor:	**Taylor Arnold**
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Office:	Jepson Hall, Rm 218
Office hours:	Monday 15:00-16:00 and 17:30-18:30

Description:

This course broadly covers the entire processing of collecting, visualizing, and modeling data. It has a MATH designation but is not a *mathematics* course. The focus is on applied statistics and data analysis rather than a detailed study of symbolic mathematics. By the end of the semester you will feel confident collecting, analyzing, and writing about datasets from a variety of fields. You will be able to use these skills to address data-driven problems in a wide range of application domains.

Computing:

To facilitate your ability to actually *do* statistics, most class meetings will involve some form of computing. No prior programming experience is assumed or required.

We will use the **R** programming environment throughout the semester. It is freely available for all major operating systems and is pre-installed on many campus computers. You can download it and all supporting files for your own machine via these links:

`https://cran.r-project.org/`
`https://www.rstudio.com/`

You are required to bring a laptop to each class meeting with R installed and running. This requires that you have a computer with an up-to-date version of macOS, Windows, or Linux (iPads and Chromebooks will not suffice). If this is not possible, or becomes a problem during the semester, it is your responsibility to inform me as soon as possible so that we can find an alternative solution.

Course Website:

All of the materials and assignments for the course will be posted on the class website:

`https://statsmaths.github.io/stat209-s19`

The website contains notes, assignment details, and supplemental materials. At the end of the semester, this version of the course will be archived and available for your reference.

Labs:

During most class meetings, you will work on a series of assignments I refer to as 'Labs'. These may be a paper handout with questions or a code file that requires that you fill in answers digitally. In order to succeed in the course you should complete these prior to the next class meeting. Rather than formally handing them in, you must instead fill out an online questionnaire at some point

prior to the next class meeting. I will not accept late submissions. The questionnaire can be found through a link on the course website. You are excused for forgetting to hand in **two** questionnaires. Beyond these you will lose one point on your final grade for every missing questionnaire.

Exams:

We will have three exams given during the semester. Exams will focus on the material in each section of the course, but due to the cumulative nature of the material each requires understanding previous sections. There may be in-class and take-home components of each exam. The in-class portion will take place on the following days:

- 2019-02-05 (Tue)
- 2019-02-26 (Tue)
- 2019-03-26 (Tue)
- 2019-04-16 (Tue)

Any take-home component will be due the class *after* the day on which the in-class exam is assigned.

Final Project:

In lieu of a final exam, the course concludes with a final project. The project is due on the second to last class of the semester so that we can accommodate in-class presentations during the final week. More details on the project will be given prior to Spring Break.

Final Grades:

You will receive a numeric score from 0-100 for each exams and the final project. Your final numeric grade is determined by taking the average score of your four best grades, rounded to the nearest integer. Finally, subtract one point for every missing lab for which you failed to turn in a form (beyond the grace window of two missing forms).

The mapping from numeric grades to letter grades is given as follows:

A $\Rightarrow$ 90 to 100

B $\Rightarrow$ 80 to 89

C $\Rightarrow$ 70 to 79

I may assign pluses and minuses as needed. When appropriate, I may also modify these cut-off scores to make them more generous (but will not make them more strict).

Attendance:

There is no formal attendance policy for this course. However, if you miss a class it is your responsibility to catch up with the material. E-mail and office hours are not a replacement for attendance. When you are present, I expect you to arrive on time, engage with the material, and give us your full attention.

Class Policies:

The following class policies address some of the most common questions and concerns that students have. If anything is unclear, please feel free to contact me for clarification at any point in the semester.

- **Academic honesty:** Cheating and plagiarism are grave scholarly offenses and potential grounds for expulsion; they are also a major barrier to your intellectual development. You are expected to familiarize yourself with the entirety of the University of Richmond's Honor Code. If you are confused or unsure about appropriate citation protocol or any other aspect of the Honor code, please consult me before turning in an assignment.
- **Special approval:** If you have special approval forms for extra time on exams or any other circumstances I should know about, please speak with me as early as possible so that we can best accommodate your needs.
- **Late work:** You are expected to submit all work on-time. The final project will be accepted after the due date with a 10-point deduction for each 24 hour period (rounded up) that it is late.
- **Make-up exams:** There are no make-up exams. If you fail to attend an exam without a valid excuse (given to me by email within 24-hours of the exam) you will receive a score of zero. In the event of a valid reason for missing the exam, the missing score will be filled in with the median grade from the remaining elements.
- **Class conduct:** During class I expect you to refrain from checking email, being on phones, or working on assignments for other classes.
- **Office hours**: If you would like to meet during my office hours, please just come by. No need to schedule an appointment. If you find me in my office at other times of the week, I am usually glad to meet then as well. Finally, I am also happy to make appointments outside of my normal office hours. These appointments are meant for discussing longer issues that are not appropriate for regular office hours (i.e., asking for recommendation letters or discussing an extended absence) or for students who cannot make my normal office hours. Please note that appointments should be booked at least 24 hours ahead of time.
- **Email:** I will also answer questions by email (it can, in fact, be much faster than scheduling an appointment for small issues). During the week, I aim to respond within 24 hours, with emails sent over the weekend responded to by Monday morning. If your question involves code, please attach your current lab or report as that will expedite my answering your question(s).

Notice:

I reserve the right to modify this syllabus, with advanced warning, throughout the semester. If necessary, I will email the class list and post an updated version of the document on the course website.