

Math 2130 - Probability and Statistics Spring 2010

Professor:

Edward J. Soares

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Office: MH Library

Office Hours: Tue/Fri 10-11 am and by appointment

Course Assistants:

Meryl Stark and Meghan Murray

CA Help Hours: EH1 Mon 9-10 pm (Meghan) and Thu 7-8 pm (Meryl)

Overview:

This course will be an introduction to probability and statistics. We will cover basic concepts of probability theory, discrete and continuous random variables and their probability distributions, basic statistical procedures including point and interval parameter estimation, and hypothesis testing. More detailed information concerning the topical coverage is provided on the daily calendar:

Learning Objectives:

By the end of this course, the student will have:

1. Gained experience with and showed improvement with self-directed learning techniques through independently working to learn new material
2. Gained experience solving problems using probabilistic reasoning and constructing basic probability models
3. Gained experience with Identifying which type of random variable applies to a given problem and then using the appropriate discrete and/or continuous probability distribution in its solution
4. Gained experience with computing point and interval estimates for population statistical parameters using standard techniques
5. Gained experience with conducting one- and two-sample hypothesis tests for population means and/or variances using standard techniques
6. Gained experience applying knowledge of statistical concepts to a student-designed real-world group project

Text:

A Brief Course in Mathematical Statistics, by E. Tanis and R. Hogg, available from Pearson, Prentice-Hall.

Attendance:

Class meetings will usually begin with a mini-lecture with discussion of the pre-class problems when appropriate. Then, the majority of class time will be spent working on problems in groups. At the end of each class, we will discuss and provide solutions to the day's in-class problems. Missing class would equate to missing a significant amount of the work you will do in this class. As such, your participation (which requires attendance) is expected.

Homework:

- **Pre-class Reading Problems:** These problems (posted on the daily calendar) will help focus your reading, and they are nominally “due” at the start of each class period. They should be fairly straightforward after reading the text and its examples. These problems will enable you to participate in class. You may try to solve these problems independently or collaborate with your classmates if you like. Before you arrive in class, self-check your answers using the provided solutions on Blackboard.
- **Post-class Homework Problems:** These problems (posted on the daily calendar) will help you check your progress in learning the material. You may try to solve these problems independently or collaborate with your classmates if you like. These problems will be collected at the start of each class period and graded for credit. Solutions will be posted on Blackboard. No late assignments are accepted. Assignments not handed in will count for zero credit.
- **Reviewing work from class:** As necessary, you should review the provided solutions for the daily in-class group work activities to ensure that you understand all aspects of the daily topics.

Note that only your post-class homework problems are collected and graded. It is your responsibility to keep up with all of the course work, self-check your answers, and seek help from the professors and course assistants as necessary. Doing the suggested homework, as well as the in-class group work, will prepare you well for the quizzes and final exam.

Quizzes:

You will have three 1.5 hour take-home quizzes throughout the semester, normally posted on Fridays and due the following Tuesdays.

Exam:

You will have a two-hour comprehensive exam in-class on March 9th.

Project:

You will do a group statistics project due at the final exam. This project will allow you to apply many of the concepts learned throughout the course to a real-world problem of your choice.

Grades:

Homework: 30%

Quizzes: 30% (total)

Final Exam: 25%

Project: 15%

Participation and engagement in class: Priceless

Your participation and engagement in class may help or hurt your grade. I view the class-time as an essential part of your learning experience, and I expect to see you working hard to maximize your learning through the in-class activities.

Laptops:

Sometimes, we will use laptops in class. Please refrain from talking on IM, doing email, or doing unrelated web surfing during class. If you are that bored, please talk to me about it.

Office Hours:

Please come to office hours with questions big or small. Or maybe you don't even know what your questions are; we can probably still help. Sometimes a few minutes in office hours can make a big difference. If you need a special appointment, please ask.

Syllabus:

The syllabus is subject to change as we go.

Special Needs:

Please discuss your needs with OSL and us as soon as possible.

Honor Code:

We regard the Olin College Honor Code as essential to the academic integrity of the college. Please express any concerns in a timely fashion.