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Probability and Statistics: Math 111

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Office Hours: 10-10:50am every weekday or by appointment.

Textbook: *Statistics, Principles and Methods*, by Richard A. Johnson and Gouri K. Bhattacharyya, 4th Edition. John Wiley & Sons, Inc.

Additional Resource: *The Cartoon Guide to Statistics* by Larry Gonick and Woollcott Smith. HarperPerennial. **It is highly recommended that you own this book.**

Course Description: Statistics is the science of gaining information from numerical data. Our modern technological world generates data at an enormous rate. Newspapers, business meetings, and governmental committee meetings are often inundated with data. However, all too often the data is improperly obtained and improperly assessed. Important everyday decisions for individuals, corporations, societies, and governments hinge on a proper understanding and assessment of data. Every facet of industry, science, engineering, economics and business benefits from a solid knowledge of statistics. This is why there are more statisticians employed in the United States than mathematicians from all other branches of mathematics combined. The material in this course will benefit students for actuarial exams and university courses in economics, engineering, biology or psychology which require statistical methodology.

The course includes three parts: descriptive statistics (Chapters 1-4), probability theory (Chapters 5-7) and inferential statistics (Chapters 8-10, 13). Before each class you should read the material covered in the previous class and attempt all of the homework assigned. Bring any questions with you, as the first part of each class will be devoted to answering questions from the prior day. You should also take the time to look over the material to be covered on that day, keeping in mind any questions that arise.

Understanding and memorizing concepts and formulas, as well as being able to solve problems are crucial.

Attendance: I will take attendance occasionally. If you are ill or will be missing class for a good reason, let me know before the class or classes you will miss (for example, by email).

Homework: I will collect homework at daily bases. Usually each homework assignment has 2-3 problems. These problems will be graded. Extra problems will also be assigned but will not be graded. However, you should do them as well, because 2-3 problems usually are not enough as practice. Sometimes one problem in each quiz will be from these problems.

Quizzes: Quizzes will be taken at the beginning of a class. Usually there will be one or two problems. Sometimes one will be from the extra problems assigned each day. There will be NO MAKE-UP QUIZZES. So let me know whenever you will miss a class. Your grade would then be computed with one fewer quiz. Otherwise, this missed quiz will be counted as 0. There will be four labs, three midterm exams and a *cumulative* final exam. If you are going to miss an exam you MUST see me PRIOR to the exam. Some (but not all) excuses will be accepted prior to the exam but none will be accepted after.

Grades: The grade breakdown is as follows

Attendance, Homework: 10%;

Quizzes: 8%;

Four Lab reports: 24% (6 each);

Midterm exams: 33% (11 each);

Final exam: 25%;

Total: 100%.

The grade scale:

<60	60-62	63-66	67-69	70-72	73-76	77-79	80-82	83-86	87-89	90-92	93-100
F	D-	D	D+	C-	C	C+	B-	B	B+	A-	A

The Computer: We will use the statistical package SPSS to look at larger 'more realistic' problems. The goal is that you feel comfortable using SPSS at the end of the semester, so that it will provide you a good start if you need to use SPSS in the future. As a reminder, prepare a floppy disk for labs if it is necessary.

Honor Code: The student is expected to conduct him or herself within the guidelines of the College's Honor Code.