

AMAT 363 - Statistics

Class: T/Th 2:45-4:05 ES 146

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Office Hours	10-11:30 T/Th	Term	Spring 2016

Course Description: A calculus-based introduction to statistics. Confidence intervals and hypothesis tests for means and variances, differences of means and ratios of variances, including P-values, power functions and sample size estimates and involving normal, binomial, t, chi-square, and F distributions. Additional topics may include introductions to simple linear regression, Bayesian statistics, sample survey methods, goodness of fit tests, non-parametric tests, or analysis of variance.

Prerequisites:

AMAT 362 is required to take this course. AMAT 367 does not have continuous probability which is assumed and necessary for success in this class, so I do not give permission to use it as a prerequisite.

Website:

The blackboard website, <http://blackboard.albany.edu>, has announcements about the course and any necessary files. Homework will also be announced and saved on this website.

Textbook:

Jay L. Devore & Kenneth N. Berk - Modern Mathematical Statistics with Applications, 2nd Ed.

Homework: I cannot stress how important homework is for your success in this class. That being said, I will not be grading it. You are expected to have completed the previous day's homework problems before the subsequent class, and all problems before the final exam. If you choose to do the homework, you will find the quizzes particularly easy. This should be taken into account if you choose to not do the homework.

Quizzes: Short pop quizzes will be at the beginning of class regularly, likely weekly. These will be open notes, open book, and open homework and will be based on the most recent homeworks (note this could also be from several days previous). If you have done the homework, they should be easy.

There will be no make-up quizzes. Of course, there are times in your life when missing a class is unavoidable (illness, personal crisis, etc). So, you have two free passes to use as you wish. You can choose to use them to drop the grade for a quiz that you missed, or to drop your lowest quiz grade at the end of the semester. Please manage these carefully!

Calculators and computers: Out of class work will often require the use of R, a statistical software package available on Windows, Mac, and Linux. If you are more comfortable with other utilities such as Excel, python, etc, you are free to use these resources, but I may not be able to help you when you run into problems. In this case, you should make great use of websites and tutorials such as <http://www.stackoverflow.com> for help with your questions.

In class and on tests, you may use a calculator. During tests, this may NOT be your cell phone. A four function calculator will be enough to do everything we need, please do not buy a TI-83 or anything like that if you do not already have one.

Tests: There will be three in-class exams. Please check the dates of these exams on the syllabus. Each exam will have two parts: an in class portion dedicated to showing that you understand the theory, and a take home portion dedicated to applying the concepts to data.

Test Makeup Policy:

In class portion: If you know you will be absent on the day of an exam, send me an email ASAP. If you have emailed me BEFORE the start of the exam letting me know that you will not make it, and provide written documentation to me before 24 hours after the exam that you could not attend the class for reasons in accordance with the Undergraduate Academic Regulations (http://www.albany.edu/undergraduate_bulletin/regulations.html), your grade for the missed exam will be the average of your other exams.

Out of class portion: If you choose to turn in the out of class portion on the day of the test, it will be graded out of the full points. If it is up to 3 days late, it will be graded out of 80% of the points. After that, it will be reviewed and returned to you with comments, but will be given a score of 0.

Project: A major component of this course is applying the concepts you have learned to a data set. This project will be done in groups and will consist of finding data, using the methods you have learned for an analysis of the data, a written project report explaining your analysis, and a brief presentation to the class on your results.

Grading: Your grade will be based on the total number of accumulated points from the semester. The *estimated* number of points is at right.

	<i>Estimated Points</i>
Quizzes	200
Project	100
Tests (3)	300
TOTAL:	600

Students with Disabilities: Reasonable accommodations will be provided for students with documented physical, sensory, systemic, cognitive, learning and psychiatric disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Director of the Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations.

Approximate Schedule:

Please note that it is likely that what is covered each day will change; however, dates of the tests will not.

Wk	Date	Topic
1	Jan 21	Review – 6.1-6.4
2	Jan 26	Review – 6.1-6.4
	Jan 28	7.1
3	Feb 02	7.2
	Feb 04	Review
4	Feb 09	Exam Ch 6, 7
	Feb 11	8.1
5	Feb 16	8.2
	Feb 18	t-dist, 8.3
6	Feb 23	R
	Feb 25	9.1
7	Mar 01	9.2
	Mar 03	9.4
8	Mar 08	Review
	Mar 10	Exam Ch 8, 9
	Mar 15	No Class – Spring Break
	Mar 17	

Wk	Date	Topic
9	Mar 22	10.1
	Mar 24	10.2
10	Mar 29	10.3
	Mar 31	11.1
11	Apr 05	11.2
	Apr 07	R
12	Apr 12	12.1
	Apr 14	12.2
13	Apr 19	Review
	Apr 21	Exam Ch 10, 11, 12
14	Apr 26	Projects
	Apr 28	Projects
15	May 03	Projects

363Z:

If you are taking this course as a writing intensive course (363Z), you will be required to write two 10-page papers during the course of the semester. You will need to meet with Dr. Munch by Feb 11 to discuss the plans for these two papers. The first will be due March 10, the second due May 3, both at the beginning of class that day. These papers will each be graded out of 50 points, so will add an additional 100 points to the point total listed above.