University of New Mexico

Syllabus for STAT 345 (section 01)

Elements of Mathematical Statistics & Probability Theory (Summer 2014)

Instructor : Fares Qeadan

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Web Page:	http://www.mathalpha.com/teaching.html
Class Meeting Times:	MTWRF 10:30 am - 11:30 am, Dane Smith Hall 325
Office Hours:	F 8:00 am -10:30 am or by an appointment

Prerequisites : MATH 181 or MATH 163..

Text : Applied Statistics and Probability for Engineers, 5th Edition by Douglas C. Montgomery and George C. Runger, John Wiley and Sons, Inc., 2010. Student companion site is available at http://bcs.wiley.com/he-bcs/Books?action=index&itemId=0470053046&bcsId=5849

Course Description : An introduction to probability including combinatorics, Bayes theorem, probability densities, expectation, variance and correlation. An introduction to estimation, confidence intervals and hypothesis testing.

Lecture : This course provides an introduction to probability theory and statistical inference. We will cover most of Chapters 2-5, and portions of Chapters 6-9. Chapters 2-5 concentrate on probability, including combinatorics, Bayes' theorem, probability distributions, expectation, variance and correlation. Chapters 6-9 introduce point estimation, confidence intervals, and hypothesis testing. This course has been designed for computer science and engineering students; however, it is broad enough for students from outside these disciplines.

Calculator and R : A calculator with the capability to compute summary statistics for one and two variables is strongly recommended for this class. So, a calculator such as TI 83, TI 84 (or other types with basic probability and statistical functions such as mean, standard deviation, etc.) is required. Occasionally, R will be used in class. R is available at: http://www.r-project.org/.

Homework (125 points) : Homework will be assigned monthly and collected in Class on the scheduled Fridays as listed below. Late homework will not be accepted (unless it is the result of an officially excused absence). Homework assignments will mostly consist of multiple-choice questions. We will have three homeworks through the semester. There is no negative points for wrong answers. The tentative schedule of the homeworks is given below:

Homework I	Friday, June 20
Homework II	Tuesday, July 8
Homework III	Thursday, July 24

Quizzes (60 points) : There will be three quizzes during the semester (each quiz is worth 30 points). Only the two highest scores of quizzes will account for the grades. The tentative schedule of the quizzes is given below:

Quiz I	Friday, June 20
Quiz II	Tuesday, July 8
Quiz III	Thursday, July 24

Exams (300 points) : There will be two mid-term exams and one final exam during the semester (each exam is worth 100 points). The tentative schedule of the exams is given below:

Exam I	Monday, June 23
Exam II	Wednesday, July 9
Final exam	Friday, July 25

Take Home Project (55 points) : You will be expected to finish this course by solving some problems, that demonstrate a comprehensive knowledge of some aspect of Statistics and Probability, in a take home project. You may work in groups with the caveat that a group of 2 or 3, should produce the work of 2 or 3. The upper limit on a group is 3 people. The Take Home Project is due on Friday July 25, 2014 in class time.

Attendance & Participation (10 points) : You are expected to attend all classes. If you have three or more unexcused absences you may be dropped from the course (which may result in a WF for the course). Please note that it is your responsibility to drop the course if you decide to stop attending classes. If you don't you will receive an F.

Extra Credit (20 points) : You may earn up to 20 points' extra credit by completing a 2 pages report about a well-known statistician or probabilist (please see extra credit handout) which is due on Friday July 25, 2014 in class time.

Grades : Your grade will be based on 300 points for exams, 125 points for homeworks, 55 points for the take home project, 60 points for quizzes and 10 points for attendance and participation . I expect to use the following scale:

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A+ = [533-550]
A  = [511-533)
A- = [495-511)
B+ = [478-495)
B  = [456-478)
B- = [440-456)
C+ = [423-440)
C  = [401-423)
C- = [385-401)
D+ = [368-385)
D  = [346-368)
D- = [330-346)
F  = [0-330)
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Disabilities : Qualified students with disabilities needing appropriate academic adjustments should contact me as soon as possible to ensure your needs are met in a timely manner.

Important Dates :

- June 6, Friday Last day to add courses or change sections
- June 13, Friday Last day to drop for tuition refund
- June 13, Friday Last day to drop a course without a grade
- June 13, Friday Last day to change grading options
- July 4, Independence Day Holiday
- July 26, Saturday Last day of instruction

Course Schedule: : Tentative Course Outline

Week	Dates	Section Covered	Notes
1	Jun 2-Jun 6	2.1-2.4, 2.5-2.7	
2	Jun 9-Jun 13	2.8, 3.1, 3.2	
3	Jun 16-Jun 20	3.3, 3.4-3.5	Jun 20 (HW-I and Quiz-I)
4	Jun 23-Jun 27	3.6-3.9, 4.1	Test 1: Monday, Jun 23
5	Jun 30-July 4	4.2-4.8	
6	July 7-July 11	5.1, 5.3, 5.5, 6.1-6.4	July 8: HW-II and Quiz II. Test 2: Wed., July 9
7	July 14-July 18	7.1-7.2, 8.1-8.3, 8.5	
8	July 21-July 25	9.1-9.3, 9.5	July 23: HW-III and Quiz-III. Final: Friday, July 25

Policies : The instructor reserves the right to make any changes he considers academically advisable. Changes will be announced in class. It is your responsibility to keep up with any changed policies and therefore:

- You are responsible for the material covered in class including any changes in the course schedule and syllabus.
- Make up exams will only be given when you have a verifiable excuse. Please note, make up exams will not be the same as the original exam and may be considered more challenging.
- Students are expected to behave in a courteous and respectful manner towards the instructor and their fellow students; this helps create a positive and supportive learning atmosphere in the classroom. Please be on time for your lectures; turn off your cell phone; and refrain from activity that could be disruptive to the class.