Math 4030SA Probability and Statistics (2012 Fall)

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Lecture Hours:	**MTWTh 8:30 – 11:00 AM (May 1 – May 22)**
Location:	**ATAC 1001**
Textbook:	**Richard Johnson, Miller & Freund's Probability and Statistics for Engineers, 8th Edition. (Link to the LU Bookstore)**
Office Hours:	**TTh 1:00 – 2:00 PM, RB 2007**

Email Communication: Any time. When sending emails regarding the course, include course number, your name, and keywords in the subject line. For example, "Subject: Math 4030, John Smith, formula for standard deviation". (Otherwise, your message will not be opened.)

Course Evaluation:

Participation in Lectures (with Daily Quzzies)	20%
Assignments	20%
Final Exam	60%

Course Calendar (Subject to Change):

Date	Reading for Lectures	Assignment Questions	Notes
Tue. May 1	Chapter 1-2: Basic concepts, Dot diagram, Bar charts, Pareto chart, Frequency distribution/table, Histogram, Stem-and-leaf display.	**Assignment 1 Due (May 3, 4PM)** Page 22: 2, 4, 12, 18, 22, 26; Page 36: 28, 32, 39, 40, 50, 54, 56.	
Wed. May 2	Chapter 2-3: Measure of central tendency, measure of positions, outliers, boxplots, measures of variations, Sample Space and events		
Thur. May 3	Chapter 3: Counting, Definition of Probability and some elementary theorem		Office Hour: 1:00 – 3:00 PM. (RB 2007)
Mon. May 7	Chapter 3-4: Conditional probability, Bayes' Theorem, Random variables	**Assignment 2 Due (May 8, 4PM)** Page 53: 4, 12, 16, 18, 20, 22, 24; Page 64: 30, 32, 34, 38, 40, 44, 48; Page 75: 58, 60, 64, 68, 78.	
Tue. May 8	Chapter 4: Binomial Distribution, Hypergeometric		Office Hour: 1:00 – 3:00 PM. (RB 2007)

	distribution, Mean and variance of a probability distribution, Chebyshev Theorem		
Wed. May 9	Chapter 4: Poisson distribution, Poisson approximate Binomial Distribution, Geometric and negative binomial distribution, Multinomial Distribution	**<u>Assignment 3 Due (May 10, 4PM)</u>** Page 91: 2, 4, 8, 10, 12, 16, 18, 24, 26, 28; Page 102: 34, 36, 40, 42, 44, 46, 48. Page 110: 50, 52, 54, 56, 58, 62, 66. Page 112: 72, 74.	
Thur. May 10	Chapter 5: Continuous random variables, Normal distribution; Normal approximation to binomial		Office Hour: 1:00 – 3:00 PM. (RB 2007) Reminder: Final date for course withdrawal is May 11
Mon. May 14	Chapter 5-6: Uniform distribution, Log-Normal distribution, Gamma distribution, Beta distribution, Weibull distribution, Joint distributions	**<u>Assignment 4 Due (May 15, 4PM)</u>** Page 125: 2, 4, 10, 14; Page 133: 20, 22, 24, 28, 32, 36, 40; Page 144: 46, 50, 54, 58, 64, 68; Page 156: 72, 76, 80, 84.	
Tue. May 15	Chapter 6: Sample Distribution of mean and variance		Office Hour: 1:00 – 3:00 PM. (RB 2007)
Wed. May 16	Chapter 7: Inference Concerning Means, confidence intervals	**<u>Assignment 5 Due (May 17, 4PM)</u>** Page 186: 11, 12, 14; Page 191: 24 (Hint: Need chi-square distribution), 26 (Hint: F-distribution is defined on page 190-191, F-distribution has two degree of freedom, df1 and df2, the cut-off value can be found from the table on page 518 (for α=0.05) and Page 519 (for α=0.01)), 27, 28, 29; Page 212: 2, 5 (**Note: there is a typo error in your book, both x-bar should be 2.467**), 6, 10, 14, 20.	
Thur. May 17	Chapter 7-8: Hypotheses concerning one mean, relation between tests and confidence interval, comparing two means, matched pairs comparison, Tests concerning variances and proportions. Final Exam Review		Office Hour: 1:00 – 3:00 PM. (RB 2007)
Tue. May 22	Chapter 11: Least square method, Simple Linear Regression, Correlation (Lecture Slides, see the "Note" on the slide 19, page 7, for the "simplified" test for linear correlation)	**<u>Assignment 6 Due (May 24, 4PM)</u>** Page 234: 54, 60 (Hint: In this question, use the null hypothesis $\mu \leq 1000$, and perform the one-tail test), 62; Page 236: 68 (There is a typo that you can easily identify: in (a) it should be "in favor of H_1") Page 257: 6 (For this question, do only part (a) by following the example we did on the lecture), 10; Page 262: 16; Page 315: 2 (In this question, only do parts (a)-(d)), 4; Page 343: 48, 52, 56, 58.	
Thur. May 24			Office Hour: 1:00 – 3:00 PM. (RB 2007)
Fri. May 25			**Final Exam: 9:00 – 12:00 (AT 1001)**