SYLLABUS FOR STATISTICS 100A - LECTURE 3
FALL QUARTER 2011

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Office hours: TR 16:00 - 18:00, W 16:30 -18:30, F 13:00 - 15:00

Lecture	Day	Class Time	Location
LEC 3	MWF	11:00 - 11:50	KNSY PV 1240B

Discussion	Day	Discussion Time	Location
DIS 3A	M	14:00 - 14:50	LAKRETZ 120

COURCE RESOURCES:

Handouts can be accessed at `http://www.stat.ucla.edu/~nchristo/statistics100A`.

Textbook (optional): Sheldon Ross, *A First Course in Probability*, Eighth Edition, Pearson, 2009.

Probability and Statistics EBook (freely available at): `http://wiki.stat.ucla.edu/socr/index.php/EBook`.

Software: R (can be downloaded freely from `http://cran.stat.ucla.edu`), and Statistics Online Computational Resource (SOCR), freely available at: `http://www.socr.ucla.edu`.

COURSE TOPICS

1. Combinatorial analysis (Chapter 1).
   Basic principle of counting.

   Permutations.

   Combinations.

   Multiple coefficients.

2. Probability (Chapter 2, Chapter 3).

   Axioms of probability.

   Sample space and events.

   Conditional probability and independence.

   Law of total probability.

   Bayes' rule.

3. Discrete random variables (Chapter 4).

   Expected value.

   Variance.

   Bernoulli and Binomial random variables.

   Poisson random variable.

   Geometric random variable.

   Geometric random variable.

   Negative binomial random variable.

   Hypergeometric random variable.

4. Continuous random variables (Chapter 5).

       Expected value.

       Variance.

       Uniform random variable.

       Normal random variable.

       Gamma, Beta, Cauchy, Weibull distributions.

       Distribution of a function of a random variable.

5. Jointly distributed random variables (Chapter 6).

       Joint distributions functions.

       Independent random variables.

       Sums of inependent random variables.

       Bivariate normal distribution.

       Order statistics.

6. Properties of estimation (Chapter 7).

       Expectation of sums of random variables.

       Covariance, variance of sums of random variables.

       Correlation.

       Moment generating functions.

7. Limit theorems (Chapter 8).

       Chebyshev's inequality and the weak law of large numbers.

       The Central Limit Theorem.

       The strong law of large numbers.

8. Simulation (Chapter 10).

       Simulating continuous random variables.

       Simulating discrete random variables.

COURSE POLICIES:
Please remember to turn off cell phones. The use of laptop computers will not be permitted in class. You are expected to adhere to the honor code and code of conduct. If you have a disability that will require academic accommodation, please contact the UCLA Office for Students with Disabilities (OSD).

COURSE GRADES:
There will be three (3) exams (cumulative), homework, and labs that will be assigned every week. Please write your name and staple your homework and labs. Late homework or labs will not be accepted and make-up exams will not be given. Being in class on time and fully participating is important for your understanding of the material and therefore for your success in the course. Attendance will be taken at random times during the course and it will count for 10% of your grade. The tentative dates/times for the exams are shown below.

The course grade will be based on the calculation
$Final\ score = 0.10 \times Attendance + 0.10 \times Homework + 0.20 \times Exam1 + 0.20 \times Exam2 + 0.40 \times Final$

Important dates:
First day of classes: 22 September.
Last day of classes: 02 December.
Holidays: 11 November (Veterans Day), 24-25 November (Thanksgiving).

Exams:
Exam 1: Week 4, Friday, 21 October after class.
Exam 2: Week 7, Wednesday or Thursday, 09/10 November.
Exam 3: Week 10, Friday, 02 December after 16:00.

Good Luck !!!