CMPE107 SYLLABUS/Schedule.
Prof. Bruce Sawhill, Instructor

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WEEK 1:

Jan. 5
Introduction to Probability and Statistics
- The birthday problem 3 ways (experimental, simulated, analytic)
- Simulation of several random processes

Jan. 7:
Probability theory:
- Axioms of set theory
- Boolean Algebra
- Disjunctive Normal Form

WEEK 2:

Jan. 12
Probability theory:
- Axioms of probability theory
- sets and combinatorics

Jan. 14
Probability Theory
- Conditional probability
- Independence in random processes

WEEK 3

Jan. 19
Probability Thoery
- Bayes' rule.
- Introduction to random variables

Jan. 21
Probability Theory
- Random variables.

Expectation and variance.
Discrete random variables

WEEK 4:

Jan. 26
Probability Theory
Discrete and continuous random variables

Jan. 28
EXAM 1

WEEK 5:

Feb. 2
Probability
Continuous random variables
The normal distribution
Multiple random variables

Feb. 4
Probability
Sums of random variables.
Independent random variables

WEEK 6:

Feb. 9
Probability Theory
Conditional expectation
Covariance

Feb 11
Probability Theory
Random Processes

WEEK 7

Feb. 16
Probability
    Limits
    Central Limit Theorem

Feb. 18
    EXAM 2

WEEK 8

Feb. 23
Statistics
    Applications

Feb. 25
Statistics
    Techniques

WEEK 9

Mar. 1
Random Processes
    Markov chains
    Markov chains analysis techniques

Mar. 3
Random Processes
    Basic notions, examples, simulations
    Bernoulli, Poisson, birth-and-death processes

WEEK 10

March 8
Stochastic processes advanced concepts
    Equilibrium, steady-state, ergodicity, Chomsky hierarchy

March 10

Last Class Meeting

EXAM 3