

CS 3341.HON – Probability and Statistics in Computer Science and Software Engineering - Honors

Course Information

Course Number/Section	CS3341.HON
Course Title	Probability and Statistics in Computer Science and Software Engineering - Honors
Term	Fall 2014
Days & Times	MW 5:30 – 6:45pm
Location	SLC 2.203

Professor Contact Information

Instructor	Dr Bill Semper
E-Mail	WJS130130@utdallas.edu
Office hours	Tues 4:00 – 6:00 pm
Phone	972-883-4139
Website	www.utdallas.edu/~wjs130130/

Course Pre-requisites, Co-requisites, and/or Other Restrictions:

Prerequisites: (MATH 1326 or MATH 2414 or MATH 2419), and (CE 2305 or CS 2305 or TE 2305 with a grade of C or better). (Same as SE 3341 and STAT 3341) (3-0) S.

Course Description

Axiomatic probability theory, independence, conditional probability. Discrete and continuous random variables, special distributions of importance to CS/SE, and expectation. Simulation of random variables and Monte Carlo methods. Central limit theorem. Basic statistical inference, parameter estimation, hypothesis testing, and linear regression. Introduction to stochastic processes. Illustrative examples and simulation exercises from queuing, reliability, and other CS/SE applications. Credit cannot be received for both courses, (CS 3341 or SE 3341 or STAT 3341) and ENGR 3341.

Student Learning Objectives/Outcomes

Students will learn fundamental rules of Probability, discrete and continuous distributions, and statistical methods most commonly used in Computer Science and Software Engineering. They will be introduced to stochastic processes, Markov chains, statistical inference, and Monte Carlo methods and will apply the theory and methods to the evaluation of queuing systems and computation of their vital characteristics.

Required Textbooks and Materials

Text: Probability and Statistics for Computer Scientists, by M. Baron, CRC Press (2007) or second edition (2013), ISBN 1584886412 or 1439875901.

Assignments & Academic Calendar: *These descriptions and timelines are subject to change at the discretion of the Professor.*

Date	Topic
August 25	Classes Begin
September 10	Quiz 1
September 29	Quiz 2
October 13	Mid-Term Exam
November 3	Quiz 3
November 19	Quiz 4
TBD	Final Exam

Grading Policy

HW Assignments	15%
4 Quizzes	25%
Mid-Term	30%
Final	30%

Grading will be on a curve, although it is the opinion of the instructor that there is a certain minimum set of knowledge which you must demonstrate to be considered proficient in the subject. The curve takes into account problems in measurement and will not be decided until all grades are in. Your midterm grade will have a limited number of data points and may or may not be an accurate reflection of your final grade, just your proficiency up to that point. The base grading scale given below may be adjusted based upon the performance of the class as a whole:

100-98, A+	97-92, A	91-90, A-
89-88, B+	87-82, B	81-80, B-
79-78, C+	77-72, C	71-70, C-
69-68, D+	67-62, D	61-60, D
59-0 ☹		

For detailed information about University policies and procedures related to this syllabus, please refer to <http://go.utdallas.edu/syllabus-policies>.