

UNIVERSITY OF MARYLAND
Department of Civil and Environmental Engineering
College Park Campus

ENCE 302 - Probability and Statistics for Civil Engineers (MWF 11:00 – 11:50 am, Rm 1108)
(Prerequisite: ENCE 203, MATH 246, ENCE major)

INSTRUCTOR: Professor Bilal M. Ayyub, **Office Hours:** MWF 12:00 am - 1:00 pm and by appointment, Room 0305, Engineering Classroom Building, **Telephone:** 301-405-1956,

Email: ayyub@umail.umd.edu, **URL:** <http://ctsm.umd.edu/ayyub/>

TEXTBOOK: Ayyub and McCuen, Probability, Statistics, and Reliability for Engineers and scientists, CRC Press, FL, 2003.

REFERENCE: Ang and Tang, Probability Concepts in Engineering Planning and Design, Volume I, John Wiley & Sons, 1975.

GRADING: HW (25%), Midterm (25%), Project (25%), Final (25%), and Quizzes (±).

TOPICS: (Notes at <http://ctsm.umd.edu/Courses/ENCE302>)

Week	Topic	Source
1.	Word processing, and Spreadsheet software	Handouts
2.	Introduction: Uncertainty in Engineering	Chapter 1
3.	Data Description & Treatment	Chapter 2
4.	Fundamentals of Probability: Uncertainty and Events	Chapter 3
5.	Fundamentals of Probability: Sets and Mathematics of Probability	Chapter 3
6.	Fundamentals of Probability: Random Variables and Moments	Chapter 3
7.	Review and Exam 1	
	Probability Distributions for Discrete Random Variables	Chapter 4
8.	Probability Distributions for Continuous Random Variables	Chapter 5
	Multiple Random Variables	Chapter 6
9.	Simulation	Chapter 7
	Fundamentals of Statistical Analysis	Chapter 8
10.	Hypothesis Testing	Chapter 9
11.	Hypothesis Testing	Chapter 9
12.	Confidence Intervals and Sample Size Determination	Chapter 11
13.	Correlation and Regression Analysis	Chapter 12
14.	Least Square Principle, Multiple regression	Chapter 13
15.	Nonlinear Regression	Chapter 13
16.	Review	

HOMEWORK ASSIGNMENTS: Professional presentation of homework assignments is required. Professional presentation consists of neat and organized solution of problems on one side of 8.5"x11" papers. Any homework not complying with professional standards will not be graded and will be assigned zero credit. The homework assignments are due one week after they are assigned. Late homework assignments will not be accepted.

EXAMS: All students must take all exams including the final exam. Only extenuating circumstances will be accepted as excuse for missing an exam. Health related excuses require medical reports and the signature of a physician that provided treatment. Academic integrity is an important foundation and required as defined at <http://www.inform.umd.edu/jpo/>