Probability and Statistics
4th Semester
School of Civil Engineering

Experiments, Sample space, Events, Probability definition and axioms, Conditional probability, Independent events, Theorem of total probability and Bayes theorem, Random variables, Discrete and Continuous random variables, Specific discrete and continuous distributions of one variable, Expectation and variance of random variables, Distribution of functions of random variables, Central limit theorem, Descriptive statistics, Random sample, Sampling distributions, Statistical inference, Point estimation methods, Confidence intervals for one or two populations, Approximate confidence intervals.

Bibliography:

1) Larson, H (1982). Introduction to Probability Theory and Statistical Inference. Wiley.
2) Bain, L.J and Engelhardt, M. (1992). Introduction to Probability and Mathematical Statistics. 2nd Edition. Duxbury Press.
3) Ross, S (2010). A first course in Probability. Pearson.
4) Spiegel, M.R. (2000). Probability and Statistics, Schaum's Outlines.
5) Hoel, P.G, Port, S.C. and Stone, S.J. (1972). Introduction to Probability Theory. Houghtion Mifflin.
6) Mendenhall, W, Beaver, R.J. and Beaver, B.M. (2012). Introduction to Probability and Statistics. Cengage Learning.