



CMPE 343: Introduction to Probability and Statistics for Computer Engineers

Fall 2020

Instructor: İnci M. Baytaş

Email: inci.baytas@boun.edu.tr

Website: <https://cmpe.boun.edu.tr/~incibaytas/>

Office: BM 24

Office Hours: TBA

Teaching Assistant: Tuluhan Akbulut

Email: tuluhan.akbulut@boun.edu.tr

Office Hours: Thursday 16:00-17:00

Time: Monday 13:00-14:50, Tuesday 14:00-14:50

Textbook:

R. E. Walpole, R. H. Myers, S. L. Myers, and K. Ye, *Probability and Statistics for Engineering and Scientist*, 9th Edition, Pearson, 2016.

Course Description: Foundations of probability and statistics. Topics include elements of probability, random variables, expectation, variance, continuous and discrete distributions (e.g., Bernoulli, binomial, uniform, Gaussian, exponential, Poisson, gamma), sampling, sample statistics, point and interval estimation, hypothesis testing, regression, and computational aspects of random variable generation, sampling and estimation.

Objectives and Learning Outcomes: The objective of this course is to provide the foundations of probability theory and statistics. Upon successful completion of this course, students will have gained the necessary understanding on:

- laws of probability theory and its applications
- use of Bayes' theorem

- concept of random variables
- probability distributions and their properties
- concept of sampling
- concept of hypothesis testing
- concept of regression
- practical implementation of some of the probability and statistics concepts

Class Participation: There will not be a roll call in this class. However, students must be aware of the fact that attending classes and actively participating in discussions are required to be successful in this class. There will be online quizzes during the classes or right after the class.

Tentative Class Schedule:

| Topic |
|---|
| Introduction |
| Elements of Probability |
| Random Variables |
| Probability Distributions |
| Discrete Probability Distributions |
| Continuous Probability Distributions |
| Simulating Random Experiments on Computer |
| Sampling |
| Estimation |
| Hypothesis Testing |
| Regression |

Course Announcements: Announcements will be sent via Moodle (<https://moodle.boun.edu.tr>). Assignments will be posted and collected through Moodle. Students are expected to use their boun email addresses.

Grading:

- Quiz (10 x 3%) 30%
- Assignments (3 x 10%) 30%
- Final 40%

Assignments: Assignments must be typed and submitted to Moodle. Handwritten assignments will NOT be accepted. Scanning handwritten assignment is also NOT allowed. Assignments may have problem solving and coding. Although students are free to use any language for coding assignments, Python is preferred.

Late Homework and Extensions: Late homework will not be accepted. A student may ask for only one extension throughout the semester. Extension requests should be sent to the instructor via email at least **2 days** before the original deadline. Late submission rule also applies to extensions. A student cannot ask for more than **3 days** of extensions starting from the original deadline.

Academic Integrity: Students are expected to complete all homework assignments and exams on their own. If any source is used to do a homework, student needs to cite the reference. Cheating in homework and exams is extremely forbidden. Cheating includes copying answers from internet, a friend, or from notes in a closed-book exam. If the instructor or the teaching assistant detects any cheating in homework, the students, who got involved in cheating, will get -100 for that homework. If the student cheats during exams, disciplinary actions will be taken.

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