Probability and Statistics for Science and Engineering – MTH 4270
December 2019

Instructor: Dr. Ezzatollah Salari, Professor
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Course Outline:

1. Mathematical models
2. Basic concepts of probability theory
3. Axioms of probability
4. Conditional probability
5. Discrete random variables
6. Probability mass function
7. Conditional probability mass function
8. Expected value and moments
9. Cumulative distribution function
10. Probability density function
11. Continuous random variables
12. Pairs of random variables
13. Joint cumulative distribution function and probability density function
14. Joint moments and expected variables
15. Vector random variables
16. Law of Large Numbers and central limit theorem
17. Parameter estimation
18. Hypothesis testing

Duration of each topic will vary and some topics may be just introduced or covered briefly.

Textbook: Alberto Leon-Garcia, Probability, Statistics, and Random Processes for Electrical Engineering, Third Edition, Pearson-Prentice Hall, 2008.

Grading Scheme:

First Test (Friday –second week of classes)	50%
Second Test (Friday- third week of classes	50%

The tests are based on materials covered in the class.

ACADEMIC POLICIES

1. All tests are closed book, closed notes and no electronic devices except a simple scientific calculator is allowed. Any exceptions will be announced in the class before the tests.
2. No makeup tests will be given except in emergency cases to be evaluated and approved by the instructor. If a student is not able to take the test for a valid reason (communicated before the test.), the course grade could be assigned based on the available data.

3. Course prerequisites are required before registering for this course.
4. Students are responsible for being familiar with the contents of the College of Engineering Dishonesty Policy. Any form of dishonesty will require an automatic "0" for the associated work for the first offense. You will get a grade of "F" on the second offense.
5. No, "drops" or "incompletes" will be assigned to avoid a failing grade in the course.
6. It is the student's responsibility to drop the course before the deadline published in the course catalog.

COURSE EXPECTATIONS

1. Students are expected to attend classes.
2. Arrange with a friend to get information when you miss a class. Students who miss lectures are responsible to find out what they missed from their classmates.
3. Regular assignments will be given to reinforce the materials covered in the class and prepare the students for the tests.