EE1080/AI1110/EE2102 Probability and Random Processes
Batch 1

Updated: 2nd Jan, 2025

1 Course Platform

We will use google classroom to post homework problems, lecture notes, announcements and discussions. You can enroll using the join code: **a3abvwg**

2 Time and Venue

The classes will be held every Mon: 12-1pm, Tues: 9-10am and Fri: 11am-12pm at LHC-12

3 Course Overview

1. Basics of Probability

   - probability model, axioms of probability, conditional probability, basics of counting

2. Random Variables

   - discrete and continuous random variables, cdf, expectation, independence, conditional expectation etc

3. Concentration Inequalities and Limit Theorems

   - markov type inequalities, convergence of random variables and limit theorems.

4. Inference: estimation with least error with and without prior

5. Random Processes: Poisson process, Markov chains

4 Grading

1. Bi-Weekly Quizzes: 45%

   - worst two will be ignored, rest will be given equal weightage
   - Schedule TBD

2. Exams: 45%

   - There will be two exams, one mid semester and one towards the end.
   - Schedule TBD

3. Programming Assignments: 10%

   - There will be two programming assignments

4. Homework: You will be provided practice sheets bi-weekly. They need not be submitted.

5 Expectation from the Student

- Students are expected to attend and participate in all the lectures, quizzes and exams

- Solve all the homework problems on your own

- Do not engage in any unfair academic practices.

6 References

- Introduction to Probability by Bertsekas, Tsitsiklis
- Probability, Random Variables and Stochastic Processes by Papoulis and Pillai
- First course on probability by Sheldon M. Ross
- List will be updated as the course progresses

7 Teaching Team

- Instructor: Myna Vajha
- TA: TBA