Electrical and Electronics Engineering Institute
University of the Philippines, Diliman, Quezon City

EE 214 Probability and Random Processes in Electrical Engineering

Study Guide: Module 0

Expected Duration:

1 Week (Sept 20-24, 2021)

Objectives

The objectives for this module are to:

- review the concept of set and probability theory
- compute for joint and conditional probabilities of events
- determine whether events are independent

Introduction

This module covers probability theory. This topic is expected to have been covered in a prerequisite undergraduate course and is meant only as a review.

Activity: Diagnostic Quiz

The only requirement for this module is the diagnostic quiz, which *you need to complete before you can proceed with the rest of the course*. You can start by trying out the **diagnostic quiz** in UVLe. You are given multiple tries to pass the quiz so there should be no harm trying it first. If you missed some items in the quiz, feel free to review the materials we've prepared and collated. Note that some topics in the diagnostic quiz are on random variables, which is part of Module 1. Should you need to review these topics, you may check the list of topics and corresponding materials you can use for review.

The detailed topics and corresponding materials for this module are as follows:

Topic	Reading Materials	Video/s	Others
Sample Spaces and Axioms of Probability	Ref 1: 1.2 - 1.2	MIT OCW Probability Models and Axioms[1]	Ref 2: Chap 3
Conditional Probability	Ref 1: 1.3	MIT OCW Conditioning and Baye's Rule[2]	Ref 2: Chap 4

[1] https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-041sc-probabilistic-systems-analysis-and-applied-probability-fall-2013/unit-i/lecture-1/#?w=535
[2] https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-041sc-probabilistic-systems-analysis-and-applied-probability-fall-2013/unit-i/lecture-2/#?w=535

Baye's theorem and Total Probability	Ref 1: 1.4	MIT OCW Independence[3]	

References:

[1] Bertsekas, Dimitri, and John Tsitsiklis. Introduction to Probability. 2nd ed. Athena Scientific, 2008. ISBN: 9781886529236.

[2] Kay, Steven. Intuitive Probability and Random Processes using MATLAB. Springer, 2005. ISBN: 978-0387241579

[3] https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-041sc-probabilistic-systems-analysis-and-applied-probability-fall-2013/unit-i/lecture-3/#?w=535