MH2814 Probability and Statistics

Note: This course replaces CV2018 and MT2001

[Lectures: 26 hrs; Tutorials: 12 hrs; Pre-requisites: MH1810 / MT1001; Academic Unit: 3.0]

Learning Objective

To equip students with fundamentals in probability and statistics required for the upper years of studies.

Course Content

1. Introduction to statistics.
2. Basic concepts of probability; Rules and theorems of probability.
3. Random variables. Discrete and continuous probability distributions.
4. Expectations; Confidence intervals, Hypothesis test; Regression and correlation.

Course Outline

S/N	Topic
1	Introduction to Statistics
2	Basic Concepts of Probability
3	Rules and Theorems of Probability
4	Random Variables
5	Discrete Probability Distribution
6	Continuous Probability Density Function
7	Expectations
8	Confidence Interval
9	Hypothesis Test
10	Regression and Correlation

Learning Outcome

At the end of the course, students will be able to understand the basic concepts in probability and statistics. In addition, students will be able to apply these basic concepts in solving practical engineering problems.

Textbooks/References

1. Devore, Jay L., “Probability and Statistics for Engineering and the Sciences”, 7th Edition, Brooks/Cole, 2009.
2. Ang, Alfredo H.S. and Tang, Wilson H., “Probability Concepts in Engineering Planning and Design”, New York: Wiley, 1984.
3. Milton, J. Susan and Arnold, Jesse C., “Introduction to Probability and Statistics: Principles and Applications for Engineering and the Computing Sciences”, 4th Edition, McGraw-Hill, 2003.