

MTH219e Fundamentals of Statistics and Probability

Level: 2

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY SEMESTER

E-Learning: BLENDED - Learning is done MAINLY online using interactive study materials in Canvas. Students receive guidance and support from online instructors via discussion forums and emails. This is supplemented with SOME face-to-face sessions. If the course has an exam component, this will be administered on-campus.

Synopsis:

Students are exposed to the essential and important concepts of Statistics and Probability for data analysis. Illustrative examples in various discipline will be discussed. Emphasis will be on understanding data variability and uncertainty; cultivating statistical thinking and applying statistical techniques to solve real-life practical problems. Descriptive statistics and useful probability models will be introduced.

Topics:

- Exploring data.
- Graphical displays.
- Interpreting and analysing data.
- Descriptive statistics, measures of location and dispersion.
- Modelling variation.
- Expectation and variance of random variables.
- Probability models.
- Bernoulli trials, binomial, geometric and uniform distributions.
- Poisson approximation for rare events and exponential models.
- Normal distribution.
- Functions of random variables.

Textbooks:

: FUNDAMENTALS STATISTICS PROBABILITY SUSS CUSTOM (eText version) 2nd edition
Pearson
ISBN-13: 9789814514330

: FUNDAMENTALS STATISTICS PROBABILITY SUSS CUSTOM (eText version) 2nd edition
Pearson
ISBN-13: 9789814514330-AA

Learning Outcome:

- Describe the meaning of “Data”.
- Explain the roles of statistics and probability concepts in analyzing data.
- Analyze data using appropriate probability models and statistical methods.
- Identify the key features of data using appropriate descriptive statistics.
- Apply the concepts of random variables and related properties.
- Identify some useful continuous probability models.
- Apply statistical techniques to practical problems and draw appropriate conclusions.
- Discuss a number of probability models.
- Solve models based on the normal distribution.
- Apply a range of statistical techniques
- Analyze and solve problems individually and/or as part of a group.
- Solve a number of problems within strict deadlines.
- Use R to solve and examine problems related to statistics and probability.

Assessment Strategies:

Continuous Assessment Component	Weightage (%)
COMPUTER MARKED ASSIGNMENT	8
TUTOR-MARKED ASSIGNMENT	16
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
PRE-CLASS QUIZ	2
Sub-Total	30

Examinable Component	Weightage (%)
Written Exam	70
Sub-Total	70

Weightage Total **100**