

MTH220e Statistical Methods and Inference

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:

MThH20 is a natural continuation of MTH219 and aims to equip students with more in-depth statistical knowledge and skills to solve real-world problems and to make intelligent decisions. Students will be able to apply a wide range of concepts and statistical methods for analysing data, carrying out hypothesis testing, estimation and drawing inferences. Correlation analysis, regression methods, non-parametric techniques and inferential statistics will be introduced.

Topics:

- Sampling distribution
- Central limit theorem
- Estimation and inferences
- Inferential statistics, confidence intervals
- Hypotheses testing I - Z test/ t test
- Non parametric statistics
- Correlation analysis
- Regression analysis - linear regression model
- Categorical data analysis

Textbooks:

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

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Learning Outcome:

- Calculate statistical parameters from data.
- Determine the equation of the least squares linear regression line.
- Comment on the results of hypothesis tests.
- Apply suitable hypothesis tests, non-parametric tests or goodness-of-fit tests.
- Compute probability or expected frequency of an event.
- Use R to perform data analysis.

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**