MATH 7016 THE NATURE OF DATA

Credit Points 10

Legacy Code 301114

Coordinator Franco Ubaudi (https://directory.westernsydney.edu.au/search/name/Franco Ubaudi/)

Description This Unit covers concepts of data centric thinking. The main areas discussed are; Populations and Samples; Sampling concepts; Types of Data; Descriptive Methods; Estimation and Inference; and Modelling. The Unit takes a computational and nonparametric approach, before discussing theoretical concepts and Normal distribution theory as large sample approximations.

School Computer, Data & Math Sciences

Discipline Computer Science

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Restrictions

Students must be enrolled in a postgraduate program.

Assumed Knowledge

Undergraduate degree with some statistical content (1 subject) is useful.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Describe types of data and the relevance to real world examples
2. Design data collection strategies that provide unbiased and reliable data
3. Apply appropriate computer based strategies to estimate population parameters of interest
4. Analyze data to make inferences about populations
5. Create and evaluate simple predictive models, using computer software
6. Evaluate literature and identify common statistical mistakes.

Subject Content

1. The Types, Description and Exploration of Data
2. Collecting Good Data
3. Probability Theory
4. Computer assisted Estimation and Inference
5. Linear Modelling
6. Large Samples and Normal Theory
7. Common Statistical Mistakes

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Item	Length	Percent	Threshold	Individual/ Group Task
Quiz	5 x 30 minutes	20	N	Individual
Final Exam	Lab based 1 hour practical test	40	N	Individual
Report	4 weeks/ approx. 3000 words	40	N	Individual

Prescribed Texts

- Lock, & Lock, Patti Frazer (2019). Statistics : unlocking the power of data (Second edition, EMEA edition.).

Teaching Periods

Autumn
Parramatta City - Macquarie St
Day
Subject Contact Gizem Intepe (https://directory.westernsydney.edu.au/search/name/Gizem Intepe/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MATH7016_22-AUT_PC_D#subjects)

Quarter 2
Parramatta City - Macquarie St
Evening
Subject Contact Franco Ubaudi (https://directory.westernsydney.edu.au/search/name/Franco Ubaudi/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MATH7016_22-Q2_PC_E#subjects)

Spring
Parramatta City - Macquarie St
Day
Subject Contact Franco Ubaudi (https://directory.westernsydney.edu.au/search/name/Franco Ubaudi/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MATH7016_22-SPR_PC_D#subjects)

Quarter 4
Parramatta City - Macquarie St
Evening
Subject Contact Franco Ubaudi (https://directory.westernsydney.edu.au/search/name/Franco Ubaudi/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=MATH7016_22-Q4_PC_E#subjects)