Mathematical Methods

Aims

The aim of the mathematical methods course is to prepare students for tertiary study in a variety of areas where an ability to critically analyse information and work with data is inherent. Students with tertiary pathways into areas such as health science, psychology and commerce would benefit from studying this course.

Learning outcomes

After successfully completing this subject students should be able to:

> Have knowledge of content and an understanding of mathematical concepts and relationships

> Use mathematical algorithms and techniques (implemented electronically where appropriate) to find solutions to routine and complex questions

> Apply knowledge and skills to answer questions in applied and theoretical contexts

> Apply mathematical models to data in order to make predictions.

> Develop solutions to mathematical problems set in applied and theoretical contexts

> Interpret mathematical results in the context of the problem

> Understand the reasonableness and possible limitations of the interpreted results, and recognise any assumptions made

> Develop and test conjectures

> Communicate mathematical ideas and reasoning to develop logical arguments

> Use appropriate mathematical notation, representations, and terminology.

Prerequisites and assumed knowledge

Mathematics to an Australian Year 11 standard.

Subject content

Week	Topic and assessment schedule
1	Orientation week
2 – 5	Introductory Skills
6 –10	Modelling from Data
Break	
11	Modelling from Data
12 – 16	Calculus
17	Revision
18	SWOTVAC
19	Exam Week
20	Exam review, Linear Programming
Break	
21 – 23	Linear Programming
24 – 28	Matrices
29 – 30	Statistics
Break	
31 – 33	Statistics
34 – 36	Revision. SWOTVAC
37 – 38	Exams
39	Graduation and transcript collection
40	End of course

Assessment

General weightings for each assessment item are outlined below

Assessment item	Weighting	Due dates
Tests	40%	As per assessment schedule
Assignments	7%	As per assessment schedule
Projects	8%	As per assessment schedule
Midyear examination	5%	As per College examination timetable
Final examination	40%	As per College examination timetable

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