



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 |