



Engineering Mathematics

Aims

Engineering Mathematics introduces students to further notions of calculus and linear algebra. It is supplemental and co-requisite with the Core Mathematics course. It primarily introduces the calculus of trigonometric functions and the algebra of complex numbers. Applications include factorisation of polynomials, parametric curves and the study of periodic behaviour. The course also includes an introduction to the notion of a multivariable function, or vector-valued function, and is suitable for students intending to study advanced mathematics. It is a supplemental course that offers further mathematical skills and knowledge to students entering engineering or the sciences, and introduces notions explored further in the first year courses Mathematics 1A-1B offered by the School of Mathematical Sciences at the University of Adelaide.

Learning outcomes

On completing this course, students will be able to:

- > Communicate mathematical concepts in the English language, using correct symbols and precise definitions
- > Be skilled in the process of note taking in a lecture style environment and written presentations
- > Understand the nature of mathematics as a sequence of mathematical truths which require proof to be certain
- > Demonstrate improved algebraic skills.

Required materials

- > Graphics calculator
- > Other resources supplied in class

Course content

The following topics will be covered:

- > Trigonometric functions
- > Complex numbers
- > Polynomials
- > Trigonometric Calculus
- > Techniques of integration

Further details of the course content will be advised in the first week of classes

Contact hours

4 hours per week



Assessment

Indicative weightings for each assessment item are outlined below

Assessment	Weighting
Trial Examination	15%
Assignments	15%
Final Examination	70%