Specialisation

Mathematics for Education

MAT HV1  |  66 Units of Credit
Overview

The discipline of mathematics at UNSW is divided into several areas of study: Pure Mathematics, Applied Mathematics and Statistics.

**Pure Mathematics** is the study of the essential structures of mathematics. Work by pure mathematicians underpins most of the technological advances of this century. Pure Mathematics is concerned with problems and techniques which transcend specific applications. Research, focusing on the development of existing theories or the creation of new ones, may be driven by applications or by the internal demands of the discipline. Pure Mathematics courses provide the insights and understanding required by those using mathematics, leading to mastery of the fundamental processes of mathematical science and the capacity for innovative applications in any area.

**Applied Mathematics** concerns the development of mathematics and models for understanding scientific phenomena, for the solution of technical and industrial problems, and for use in the social, economic and management sciences. Courses are designed to provide basic mathematical and computational skills needed for a wide range of applications, to develop the capability to construct, analyse and interpret mathematical models, and to encourage enthusiasm for the role of the mathematician in a variety of contexts.

**Statistics** is the science and art of using factual material for modelling and inference. Its mathematical foundations are in the theory of probability and it deals with how to estimate and make decisions using knowledge which is uncertain or observational material which is subject to error. There is a rich interplay of ideas between the theory of statistics and fields such as engineering, medicine and biological and behavioural sciences where statistical problems constantly arise.

This stream is for a major in Mathematics for Education as part of a concurrent Bachelor of Science / Bachelor of Education program (4076). Only students enrolled concurrently in both a Bachelor of Science and Bachelor of Education program may take this major. The major ensures that students meet all accreditation requirements with the NSW Institute of Teachers.
Faculty
Faculty of Science

School
School of Mathematics & Statistics

Study Level
Undergraduate

Minimum Units of Credit
66

Specialisation Type
Major
Available in Program(s)

Program(s) in which this major is available

Bachelor of Science - BSc
3970 Science
Faculty: Faculty of Science
Campus: Kensington
Units of Credit: 144
Typical Duration: 3 Years
Specialisation Structure

Students must complete 66 UOC.

Mathematics for Education Stream Rule

This stream is only available to students enrolled in 4076 Science/Education (Secondary).

Level 1 Core Courses

Students must take 18 UOC of the following courses.

Note: Students who intend to become Mathematics teachers need to complete at least 6 UOC of computing courses (e.g., COMP1911, COMP1400, or ENGG1811) and 6 UOC of Physics (e.g., PHYS1111, PHYS1121, or PHYS1131).

- **MATH1081 | 6 UOC**
  Discrete Mathematics

  One of the following:
  - **MATH1131 | 6 UOC**
    Mathematics 1A

  - **MATH1141 | 6 UOC**
    Higher Mathematics 1A

  - **MATH1151 | 6 UOC**
    Mathematics for Actuarial Studies and Finance 1A

  One of the following:
  - **MATH1231 | 6 UOC**
    Mathematics 1B

  - **MATH1241 | 6 UOC**
    Higher Mathematics 1B

  - **MATH1251 | 6 UOC**
    Mathematics for Actuarial Studies and Finance 1B
Level 2 Core Courses

Students must take 30 UOC of the following courses.

One of the following:
MATH2501  |  6 UOC
Linear Algebra

MATH2601  |  6 UOC
Higher Linear Algebra

One of the following:
MATH2011  |  6 UOC
Several Variable Calculus

MATH2111  |  6 UOC
Higher Several Variable Calculus

One of the following:
MATH2801  |  6 UOC
Theory of Statistics

MATH2901  |  6 UOC
Higher Theory of Statistics

One of the following:
MATH2521  |  6 UOC
Complex Analysis

MATH2621  |  6 UOC
Higher Complex Analysis

One of the following:
MATH2121  |  6 UOC
Theory and Applications of Differential Equations

MATH2221  |  6 UOC
Higher Theory and Applications of Differential Equations

Level 3 Prescribed Electives
Students must take at least 6 UOC of the following courses.

*any level 3 Mathematics course*

**Level 3 Core Courses**

Students must take a minimum of 12 UOC or a maximum of 15 UOC of the following courses.

Note: where MATH3611 is substituted for MATH3570, students may need to take 3 UOC of courses above the minimum UOC requirements for the program, unless they are able to find another 3 UOC science course to take as a Level 3 elective.

- **MATH3560  |  3 UOC**
  History of Mathematics

- One of the following:
  - **MATH3511  |  6 UOC**
    Transformations, Groups and Geometry
  - **MATH3531  |  6 UOC**
    Topology and Differential Geometry

- **MATH3701  |  6 UOC**
  Higher Topology and Differential Geometry

  One of the following:
  - **MATH3570  |  3 UOC**
    Foundations of Calculus

- **MATH3611  |  6 UOC**
  Higher Analysis

**Enrolment Disclaimer**

Unless advised otherwise by your program authority, you should follow the rules for the handbook for the year you commenced your program. You are also responsible for ensuring you enrol in courses according to your program requirements. myUNSW enrolment checks that you have met enrolment requirements such as pre-requisites for individual courses but not that a course will count towards your program requirements.
Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)
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Authorised by Deputy Vice-Chancellor (Academic)
CRICOS Provider Code 00098G
ABN: 57 195 873 179