Overview

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.
<table>
<thead>
<tr>
<th><strong>Faculty</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty of Science</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>School</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>School of Mathematics &amp; Statistics</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Study Level</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Minimum Units of Credit</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Specialisation Type</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td></td>
</tr>
</tbody>
</table>
Available in Program(s)

Program(s) in which this major is available

Bachelor of Science (Advanced Mathematics) (Honours) - BSc(AdvMath)(Hons)
3956 Advanced Mathematics (Honours)

Faculty: Faculty of Science
Campus: Kensington
Units of Credit: 192
Typical Duration: 4 Years
**Specialisation Structure**

Students must complete 90 UOC.

**Level 1 Core Courses**

Students must take 18 UOC of the following courses.

- **MATH1081** | 6 UOC  
  Discrete Mathematics

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

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

**Level 2 Core Courses**

Students must take 36 UOC of the following courses.

- **MATH2111** | 6 UOC  
  Higher Several Variable Calculus

- **MATH2221** | 6 UOC  
  Higher Theory and Applications of Differential Equations

- **MATH2301** | 6 UOC  
  Mathematical Computing

- **MATH2601** | 6 UOC  
  Higher Linear Algebra

- **MATH2621** | 6 UOC  
  Higher Complex Analysis

- **MATH2901** | 6 UOC
Higher Theory of Statistics

**Level 1 Computer Science Elective**

Students must take at least 6 UOC of the following courses.

- any level 1 Computer Science course

---

**Level 3 Electives - List A**

Students must take at least 18 UOC of the following courses.

- MATH3041 | 6 UOC
  Mathematical Modelling for Real World Systems

---

- MATH3101 | 6 UOC
  Computational Mathematics for Science and Engineering

---

- MATH3121 | 6 UOC
  Mathematical Methods and Partial Differential Equations

---

- MATH3161 | 6 UOC
  Optimization

---

- MATH3171 | 6 UOC
  Linear and Discrete Optimization Modelling

---

- MATH3201 | 6 UOC
  Dynamical Systems and Chaos

---

- MATH3261 | 6 UOC
  Fluids, Oceans and Climate

---

- MATH3311 | 6 UOC
Mathematical Computing for Finance

MATH3361  6 UOC
Stochastic Differential Equations: Theory, Applications, and Numerical Methods

MATH6781  6 UOC
Biomathematics

Level 3 Electives - List B

Students must complete 12 UOC of Level 3 Mathematics courses, chosen with approval of the Head of School of Mathematics and Statistics or nominee.

any level 3 Mathematics course

Recommended Level 1 Electives

These courses are not required but are recommended as good complementary Level 1 electives for this major.

Students interested in physical sciences or theoretical oceanography, meterology or fluid dynamics, both of:
PHYS1121 Physics 1A (6 UOC)
PHYS1221 Physics 1B (6 UOC)

Students interested in social or biological sciences, at least 12 UOC (i.e. both level I courses from the subject area) from:

Biology
BABS1201 Molecules, Cells and Genes (6 UOC)
BIOS1101 Evolutionary & Functional Biol (6 UOC)

Psychology
PSYC1001 Psychology 1A (6 UOC)
PSYC1011 Psychology 1B (6 UOC)

Chemistry
CHEM1011 Essentials of Chemistry 1A (6 UOC)
CHEM1021 Essentials of Chemistry 1B (6 UOC)

Students interested in computational methods or computer science:
COMP1511 Introduction to Programming (6 UOC)
Recommended Level 2 Electives

Students in this major are recommended to include at least 6 UOC from the following among their electives:

MATH2241 Intro to Atmos & Oceans (6 UOC)

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.
Additional Information

Honours

Students completing a major in Applied Mathematics may be eligible to undertake Honours in Applied Mathematics, Pure Mathematics, or Statistics.

Please consult with staff from the School of Mathematics and Statistics
Pre-2019 Handbook Editions

Access past handbook editions (2018 and prior)

Pre-2019 Handbook Editions
© UNSW Sydney (CRICOS Provider No.: 00098G), 2019. The information contained in this Handbook is indicative only. While every effort is made to keep this information up-to-date, the University reserves the right to discontinue or vary arrangements, programs and courses at any time without notice and at its discretion. While the University will try to avoid or minimise any inconvenience, changes may also be made to programs, courses and staff after enrolment. The University may also set limits on the number of students in a course.

Authorised by Deputy Vice-Chancellor (Academic)
CRICOS Provider Code 00098G
ABN: 57 195 873 179