



Welcome

This guide is for first-year students enrolling in mathematics and statistics units:

- For a **major** in one or more of Mathematics, Statistics, Financial Mathematics and Statistics, or Data Science;
- As part of the “**Science Mathematics Degree Core**” requirements;
- As part of an **Engineering degree**;
- As an **elective subject** in another degree.

We have a large range of first-year courses, so enrolling in the **right units of study** for your **current level of knowledge** is very important for your ongoing success.

How to choose your units

1 Choose your level

| | Advanced (NSW HSC Extension 2 Mathematics or equivalent) | Standard (NSW HSC Extension 1 Mathematics or equivalent) | Fundamental (NSW HSC 2 Unit Mathematics or equivalent) | Pre- Fundamental |
|--|---|--|---|-------------------------------|
| Calculus | MATH1931/1921 (S1) MATH1933/1923 (S2) | MATH1021 (S1,S2,Sum) MATH1023 (S1,S2,Sum) | MATH1011 (S1,Sum) MATH1013 (S2,Sum) | MATH1111* MOOC |
| Linear Algebra | MATH1902 (S1) | MATH1002 (S1, Sum) | MATH1014 (S2,Sum) | |
| Data Science & Statistics | DATA1901* (S1,S2) MATH1905 (S2) | DATA1001* (S1,S2) MATH1005 (S1,S2,Sum) MATH1115 (S1,S2,Sum,Win) | | OLE1631/1632 PHAR1811 (S1) |
| Other (Discrete Mathematics & General) | MATH1904 (S2) | MATH1004 (S2) MATH1064 (S2) | | OLE1624/1635 OLE1629/1630 |

2 Choose your units

- Our units are offered in Semesters 1 (S1) and 2 (S2), Summer (Sum) and Winter (Win), as indicated above.
- All units are 3 credit points (CP), except DATA1901/1001/1002 and MATH1111 which are 6 credit points, indicated by *. OLES are offered at 0 and 2 CP.

1 Choose your level

We strongly recommended that you choose your units according to your High School Mathematics background.

- You can take a mixture of Advanced and Standard units, but in Semester 1 it is usually more straight forward to take all units from the same level.
- If you plan to keep studying mathematics and statistics in second-year, you should not take Fundamental units (except Data Science & Statistics units).
- You can change levels in Semester 2 if you obtain strong (or weak) marks in Semester 1. Before making any decisions, please contact fy.maths@sydney.edu.au so we can advise you.

2 Choose your units

Are you doing units to satisfy the “Science Mathematics degree core”, but are not doing a maths major?

Science students must complete 12 credit points of the “**Science Mathematics Degree Core**” which is

- Degree Core 1** 6 CP Calculus, 3 CP Linear Algebra, 3 CP Statistics **OR**
Degree Core 2 6 CP Data Science, 3 CP Calculus, 3 CP Linear Algebra.

The table below shows some **recommended pathways** to fulfil the degree core, with the most balanced semester load.

| | Advanced | Standard | Fundamental |
|---|--|--|--|
| <p>Degree Core 1</p> <p>This choice keeps the most options open for you and is also a requirement for the Physics or Nanoscience & Nanotechnology major.</p> | <p>S1: MATH1921, MATH1902 S2: MATH1923, MATH1905</p> | <p>S1: MATH1021, MATH1002 S2: MATH1023, MATH1005</p> | <p>S1: MATH1011, MATH1005 S2: MATH1013, MATH1014</p> <p>(Note: this does not satisfy Nanoscience & Nanotechnology major requirements.)</p> |
| <p>Degree Core 2</p> <p>Suggested for a major in Psychology, Life and Environmental Sciences or Health, or for the Medical Science degree.</p> | <p>S1: MATH1921, MATH1902 S2: DATA1901*</p> | <p>S1: MATH1021/1023, MATH1002 S2: DATA1001*</p> | <p>S1: DATA1001* S2: MATH1013, MATH1014</p> <p>Alternatively: S1: MATH1011, DATA1001* S2: MATH1014</p> <p>S1: MATH1011 S2: MATH1014, DATA1001*</p> |

Are you doing a major in Mathematics, Statistics, Financial Mathematics and Statistics, or Data Science?

The table below shows some **recommended pathways** to fulfil the Science degree core for each major and combination of majors, with the most balanced semester load.

| | Advanced | Standard | Fundamental |
|--|---|--|---|
| Mathematics 6CP Calculus 3CP Linear Algebra 3CP Statistics/Discrete Maths | Science core: S1: MATH1921, MATH1902 S2: MATH1923, MATH1905 Non-Science degree core: S1: MATH1921, MATH1902 S2: MATH1923, MATH1904 | Science core: S1: MATH1021, MATH1002, S2: MTH1023, MATH1005 Non-Science core: S1: MATH1021, MATH1002, S2: MTH1023, MATH1004 | Please contact fy.maths@sydney.edu.au |
| Statistics, Financial Mathematics and Statistics 6CP Calculus 3CP Linear Algebra 3CP Statistics OR 3CP Calculus 3CP Linear Algebra 6CP Data Science | S1: MATH1921, MATH1902 S2: MATH1923, MATH1905 S1: MATH1921, MATH1902 S2: DATA1901 | S1: MATH1021, MATH1002, S2: MTH1023, MATH1005 S1: MATH1021, MATH1002, S2: DATA1001 | S1: MATH1011, MATH1005 S2: MATH1013, MATH1014 S1: DATA1001 S2: MATH1013, MATH1014 |
| Data Science 3CP Calculus 3CP Linear Algebra 6CP Data Science | S1: MATH1921, MATH1902, S2: DATA1901*, DATA1002* | S1: MATH1021, MATH1002 S2: DATA1001*, DATA1002* | S1: DATA1001* S2: MATH1013, MATH1014, DATA1002* S1: MATH1011, MATH1005 S2: MATH1013, MATH1014, DATA1002* |
| Data Science major + another major in Mathematics, Statistics, Financial Mathematics & Statistics | S1: MATH1921, MATH1902, DATA1901* S2: MATH1923, MATH1904, DATA1002* | S1: MATH1021, MATH1002, DATA1001*, S2: MATH1023, MATH1004 DATA1002* | Please contact fy.maths@sydney.edu.au |

Major(s)

- If you want to complete a major in Mathematics, Statistics, or in Financial Mathematics and Statistics, and you also intend to take a **major in Psychology, Life and Environmental Sciences, or Health**, or are taking the **BScMed**, then you should take either the units in the 1st row (12 CP) or the 4th row without DATA1002 (18 CP).

- If you are a **Science student**:

- the units you enrol in for a major in Mathematics, Statistics, Financial Mathematics and Statistics, or Data Science will also count towards the “Science Mathematics Degree Core” requirements. So don’t enrol in the separate “Science Mathematics Degree core”.
- you are also required to take at least 12 credit points of units offered by the Science Faculty (Science Faculty Table A) that are not Mathematics, Statistics, Financial Mathematics and Statistics or Data Science units.

General Advice

- Students who have not done the NSW HSC should contact fy.maths@sydney.edu.au for advice.
- Students wanting or required to do mathematics in Year 2 as an elective or because it is recommended by another major (e.g. Physics or Nanoscience and Nanotechnology) should enrol in Advanced (MATH19XX) units or Standard (MATH102X/1002/1005) units.
- Your degree program may have an assumed knowledge of HSC Extension 1 Mathematics or equivalent. If you do not have this assumed knowledge, you should consider taking the Extension 1 bridging course before Semester 1 starts.
- If you are still uncertain about which units to take, please contact fy.maths@sydney.edu.au for advice.

Further information

Information about units

You can find a description of all the units and other useful information in the first-year handbook. This is a very useful document!

<http://www.maths.usyd.edu.au/u/UG/TU/YR1ADMIN/r/handbook.pdf>

This information is also found on Canvas:

<https://canvas.sydney.edu.au/courses/7913/pages/sms-units-of-study>

Regulations and Core Units for Majors

http://sydney.edu.au/handbooks/science/subject_areas_ae/tableA_core.shtml

http://sydney.edu.au/handbooks/science/subject_areas_fm/mathematics.shtml

http://sydney.edu.au/handbooks/science/subject_areas_nz/statistics_descriptions.shtml

http://sydney.edu.au/handbooks/interdisciplinary_studies/units_of_study/tables_dh/financial_mathematics_statistics_table.shtml

http://sydney.edu.au/handbooks/interdisciplinary_studies/units_of_study/tables_dh/data_science_table.shtml

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