Faculty of ENGINEERING Stream Details

In Term 1, students in the Engineering stream undertake the core Academic Skills course (REGZ9075), Mathematics Skills 1 (REGZ9070) and Introduction to the world wide web (COMP1000). In Term 2, students undertake Communicating in Engineering (ENGG0360), Mathematics Skills 2 (REGZ9072) and Fundamentals of Physics (PHYS1111). On successful completion of the first two Terms, in Term 3 (Term 1 2020) Engineering stream students enrol in Fundamentals of Mathematics B (MATH 1011).

An overall WAM of 65 with 65 for each of MATH1011 and PHYS1111 is required for entry into the Bachelor of Engineering at UNSW (Flexible First Year). Students will gain credit toward the degree of Bachelor of Engineering for ENGG0360.

ELIGIBILITY

<table>
<thead>
<tr>
<th>ACCESS Eligible</th>
<th>Assessed as eligible for UNSW's ACCESS Scheme via UAC's Educational Access Schemes (EAS) process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>17-19 years on 1 March 2019</td>
</tr>
<tr>
<td>Citizenship / Residency</td>
<td>An Australian citizen, New Zealand citizen or hold a current Australian Permanent Resident visa</td>
</tr>
<tr>
<td>Post-school study</td>
<td>You cannot study UNSW Prep at the same time as another course</td>
</tr>
<tr>
<td>UAC</td>
<td>Include at least one UNSW Preparation Program preference in your UAC application. UAC codes are: Arts and Social Sciences - 430100; Business - 430110; Engineering - 430120; Science - 430130</td>
</tr>
<tr>
<td>ATAR</td>
<td>Have an ATAR of 50.00 or above, or be an Indigenous applicant applying via UNSW's Nura Gili Indigenous Admission Scheme</td>
</tr>
<tr>
<td>Additional Criteria</td>
<td>Provide a personal statement (using the template on the website) via UAC’s ‘Check and Change’ facility. You may also be asked to attend a short interview in January.</td>
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</table>

TIME COMMITMENT

Structure - 3 x 10 week terms
(February - April, June - August and September - November)

Time commitments are based on the subjects undertaken within each Term (see Course Components).
At least 6-8 hours of independent study per week is recommended for each course, as well as some time each week for online learning.

APPLICATION

Applications must be made online via the Universities Admissions Centre (UAC), www.uac.edu.au. The Personal Statement is a compulsory part of the UNSW Prep application. It is your chance to share what interests you about the program, and also what makes you a suitable candidate.

COST

- UNSW Prep is fully funded by the Australian Government so for the first few subjects of your degree you pay no course fees.*
- You need to pay the Student Services and Amenities Fee ($149 per year in 2018), which lets you access all the services for students at UNSW,
- You pay the cost of any materials you need for your course.

FURTHER INFO

The Learning Centre
Ph: +61 2 9385 2060
Email: unswprep@unsw.edu.au
Course information
General enquiries

UNSW Admissions
Ph: +61 2 9385 3656
www.enquiry.unsw.edu.au
Eligibility & application
Future study options

*This may change. Please check fee details prior to application www.futurestudents.unsw.edu.au/unswprep17-19
In Term 1, students in the Engineering stream undertake the core Academic Skills 1 course (REGZ9075) and the Mathematics Skills 1 course (REGZ9070). In Term 2, students undertake Introduction to the world wide web (COMP1000) and Mathematics Skills 2 (REGZ9072). In Term 3, students undertake Communicating in Engineering (ENGG0360), Mathematics Skills 3 (REGZ9073), and Fundamentals of Physics (PHYS1111). On successful completion of the first three Terms, in Term 1, 2020, Engineering stream students enrol in Fundamentals of Mathematics B (MATH 1011).

The program must be completed within a two-year period.

### Course Components 2019

#### Term 1 Details

<table>
<thead>
<tr>
<th>Academic Skills 1 (REGZ9075)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For:</strong></td>
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<tr>
<td><strong>Available:</strong></td>
</tr>
<tr>
<td><strong>Prior knowledge:</strong></td>
</tr>
</tbody>
</table>

Academic Skills 1 develops the fundamental skills of studying at university. This course will be based around the topic of technology. Other topics covered in the course include:

- orientation to the academic system
- time management skills
- critical analysis skills
- essay writing
- note taking from lectures and written material
- preparing seminar presentations
- examination techniques
- an introduction to online learning

### AND

<table>
<thead>
<tr>
<th>Mathematics Skills 1 (REGZ9070)*</th>
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<tbody>
<tr>
<td><strong>For:</strong></td>
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<tr>
<td><strong>Available:</strong></td>
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<tr>
<td><strong>Prior Knowledge:</strong></td>
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</tbody>
</table>

UPP Mathematics Skills 1 is for students who have not achieve an appropriate level of mathematics at high school or equivalent and wish to apply to UNSW degree programs with assumed knowledge in mathematics. Topics include:

- basic arithmetic and algebra (2.5 weeks);
- further arithmetic and algebra (2.5 weeks);
- coordinate geometry (2 weeks);
- functions and graphs (2 weeks).

#### Term 2

<table>
<thead>
<tr>
<th>Mathematics Skills 2 (REGZ9072)*</th>
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<tbody>
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<td><strong>For:</strong></td>
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<td><strong>Available:</strong></td>
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<tr>
<td><strong>Prior knowledge:</strong></td>
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</table>

Mathematics Skills 2 is designed to provide a level of competency in mathematics for students who have not studied HSC Mathematics (or equivalent) at high school and who wish to apply to UNSW programs with assumed knowledge in Mathematics

- basic arithmetic and algebra (2.5 weeks);
- further arithmetic and algebra (2.5 weeks);
- coordinate geometry (2 weeks);
- functions and graphs (2 weeks).

* A student who attains a distinction level pass or higher in REGZ9070 Maths Skills in Term 1 and successfully completes REGSZ9075 MAY be permitted to take MATH1011 in Term 2 after consultation with the Maths Skills Coordinator.
Introduction to the world wide web, spreadsheets and databases (COMP1000)

For: Compulsory for ALL UNSW Prep Engineering stream students
Available: Term 2

Prior knowledge: Must be proficient in written and spoken English

Spreadsheets and databases are two of the most commonly used and powerful computer tools yet they are often poorly utilised and the reasons for using one rather than the other are poorly understood. COMP1000 aims to explain the concepts underlying both of these powerful pieces of software so that students can exploit them effectively for both their studies and future careers. The course investigates how to design and implement effective spreadsheet and database applications. Lab access will be provided, but students will be expected to have personal copies of Microsoft Excel and Microsoft Access on their own computers.

Term 3

Communicating in Engineering (ENGG0360)

For: Compulsory for ALL UNSW Prep Engineering stream students
Available: Term 3

Prior knowledge: Must be proficient in written and spoken English

Communicating in Engineering examines the expectations and conventions that apply to spoken and written communications within engineering and science. These include different textual genres, aspects of rhetoric, the ethical use of material, formal language structure; grammar and syntax. Students will improve their ability to collect and build ideas into coherent arguments, learn how to construct texts that demonstrate critical thinking, and develop their communication skills (speaking, listening, writing and reading), in preparation for subsequent study in a professional context.

UPP Mathematics Skills 3 (REGZ9073)

For: Compulsory for ALL UNSW Prep Engineering stream students
Available: Term 3
Pre-requisites: Successful completion of REGZ9072.

UPP Mathematics Skills 3 is for students who have not achieved an appropriate level of mathematics at high school or equivalent and wish to apply to UNSW degree programs with assumed knowledge in mathematics. Topics include:

- applications of calculus (2 weeks);
- sequences and series (2 weeks);
- introductory probability (2 weeks);
- introductory statistics (3 weeks).
**Fundamentals of Physics (PHYS1111)**

**For:** Compulsory for ALL UNSW Prep Engineering stream students  
**Available:** Term 2

**Prior knowledge:** Must be proficient in written and spoken English

**Fundamentals of Physics** is an introductory level course in physics for students from all disciplines. The course covers the methods of physics, including the following topics:

- the description of motion;  
- forces and momentum;  
- the dynamics of particles;  
- kinetic and potential energy;  
- the conservation of energy;  
- temperature and thermal equilibrium;  
- specific and latent heat;  
- thermal energy;  
- fluids and fluid flow;  
- oscillations and simple harmonic motion;  
- waves, wave reflection, refraction and interference;  
- the wave nature of light;  
- electric fields and charge;  
- electric potential and energy;  
- electric currents;  
- magnetism;  
- electromagnetic induction and Faraday's law;  
- early quantum theory and models of the atom;  
- nuclear physics and radioactivity;  
- nuclear energy.

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**Term 1/3 2020**

**Fundamentals of Mathematics B (MATH1011)**

**For:** Compulsory for ALL UNSW Prep Engineering stream students  
**Available:** Term 1

**Prior knowledge:** A level of knowledge equivalent to achieving a mark of at least 60 in HSC Mathematics.

- Functions (and their inverses), limits, asymptotes, continuity;  
- differentiation and applications;  
- integration, the definite integral and applications;  
- inverse trigonometric functions;  
- the logarithmic and exponential functions and applications;  
- sequences and series;  
- mathematical induction;  
- the binomial theorem and applications;  
- introduction to probability theory;  
- introduction to 3-dimensional geometry;  
- introduction to linear algebra