UNSW SYDNEY | Academic Skills

UNSW Prep Program 17-19 2023

Engineering Stream Details

In the Engineering stream, students take both Enabling courses and Engineering Faculty courses. If students do not have Yr 12 Mathematics Advanced, then they are required to take Mathematics Skills courses. 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

- **Access Eligible**
  Assessed as eligible for UNSW's ACCESS Scheme via UAC's Educational Access Schemes (EAS) process.
- **Age**
  17-19 years on 1 March 2023.
- **Citizenship/Residency**
  An Australian citizen, New Zealand citizen or hold a current Australian Permanent Resident visa.
- **Post-school study**
  You cannot study UNSW Prep at the same time as another course.
- **UAC**
  Include at least one UNSW Preparation Program preference in your UAC application. UAC codes are: Humanities - 430100; Business - 430110; Engineering - 430120; Science - 430130.
- **ATAR**
  Have an ATAR of 50.00 or above, or be an Indigenous applicant applying via UNSW's Nura Gili Indigenous Admission Scheme.
- **Additional Criteria**
  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.

How to apply

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.

Time Commitment

- Study involves 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.

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 ($315 per year in 2022), which lets you access all the services for students at UNSW.

You pay the cost of any materials you need for your course.

Still curious?

Academic Skills

UNSW Sydney

Sydney NSW 2052 Australia

Contact us: unswprep@unsw.edu.au

enquiry.unsw.edu.au

UNSW Prep Course Components

Term 1
Academic Skills 1 (REGZ9075)

For ALL UNSW Prep Program students (compulsory)

Available Term 1

Prior Knowledge Must be proficient in written and spoken English

Academic Skills 1 develops the fundamental skills of studying at university. This course will be based around the topic of technology.

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

Mathematics Skills 1 (REGZ9070)

For ALL UNSW Prep Engineering stream students (compulsory)

Available Term 1

Prior Knowledge Year 10 Advanced Level Mathematics is assumed (Confident with algebra, such as simplification of expressions, solving equations & in-equations, factorisation including quadratic equations and using a scientific calculator including the fraction, power and exponential keys)

UPP Mathematics Skills 1 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
- 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
Mathematics Skills 2 (REGZ9072)

For ALL UNSW Prep Engineering stream students (compulsory)

Available Term 2

Prior Knowledge Must be proficient in written and spoken English

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, and follows on from REGZ9070.

Topics
- differential calculus (3 weeks)
- integral calculus (1.5 weeks)
- trigonometry and trigonometric functions (2.5 weeks)
- exponential and logarithmic functions (2 weeks)

NB: If you already have completed Year 12 Mathematics at the standard expected of 1st Year, you are able to substitute Maths Skills courses. These substitute courses must be approved by the program co-ordinator. Please contact the program co-ordinator in Orientation Week to discuss alternative courses.

Term 2 (continued)

The Art of Computing (COMP1010)

For ALL UNSW Prep Engineering stream students (compulsory)

Available Term 2

Prior Knowledge Must be proficient in written and spoken English

Computational thinking is a critical skill in modern society. This course aims to provide you with an understanding of the foundations of computing, how software systems work, and how to construct new software systems. By the end of the course, you will have produced an application (app) of your choice, solving a problem that's important to you.

Topics: computer systems, computational problem solving, spreadsheets, programming in Python, interfaces.

Term 3

Communicating in Engineering (ENGG0360)

For ALL UNSW Prep Engineering stream students (compulsory)

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 ALL UNSW Prep Engineering stream students (compulsory)

Available Term 3

Pre-requisite 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.

REGZ9073 follows on from REGZ9072 and takes students to the level of 2 Unit Yr 12 Mathematics

Topics
- applications of calculus (2 weeks)
- sequences and series (2 weeks)
- introductory probability (2 weeks)
- introductory statistics (3 weeks)

Term 1 or 3, 2024

Fundamentals of Physics (PHYS1111)

For ALL UNSW Prep Engineering stream students (compulsory)

Available Term 3

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.

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

Fundamentals of Mathematics B (MATH1011)

For ALL UNSW Prep Engineering stream students (compulsory)

Available Term 1 or 3

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

Topics
- 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