Bachelor of Engineering Technology - Asset Management Apprenticeship

Location

Offered from the Otago Polytechnic Dunedin Campus and studied alongside employment

Duration

Two to five years depending on your entry route into the programme

Delivery

Industry project learning on the job combined with blended learning (online, face-to-face, workshops)

Credits

360

DescLevel

360

Intakes

Flexible

Apply

Step 1. Please email our Apprentice Coordinator, Sarah Hexamer, to make sure this programme is for you. Email: Sarah.Hexamer@op.ac.nz Step 2. If you and Sarah agree this is the right path for you, please apply online by clicking the light blue APPLY button.
APPLY NOW
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A first in New Zealand, this apprenticeship degree has been developed in partnership

with industry to combat the looming skills shortage in the area of Infrastructure Asset Management.

The skills shortage is due to a lot of ageing infrastructure that needs replacing, new technological advances for sustainable infrastructure and processes, and a lack of newly trained asset managers.

The industry is taking a proactive approach to safeguard New Zealand's infrastructure and you can be part of the solution!

Through this apprenticeship pathway, you'll gain experience in industry projects within your chosen specialty - Civil, Mechanical or Electrical Engineering. You will develop problem-solving and critical thinking skills through a combination of theory and hands-on practice.

Aimed at all levels of experience, the beauty of this pathway is that you learn by doing and will be fully-immersed in a real-world work environment.

The Bachelor of Engineering Technology is accredited by Engineering New Zealand (ENZ) which ensures it meets national and international standards. Upon successful completion, you'll be eligible to become a graduate member of ENZ. Internationally, the degree is accredited to the International Engineering Alliance's Sydney Accord. Supported by the Institute of Public Works Engineering Australia (IPWEA).

What is Infrastructure Asset Management?

Infrastructure asset management is the integrated, multi-disciplinary set of strategies used in sustaining public infrastructure assets such as water supply or treatment facilities, communications, roads, bridges and railways. Generally, the process focuses on the later stages of a facility’s life cycle, specifically maintenance, rehabilitation and replacement.

Asset Management can also refer to the management of industry/company assets (e.g. keeping the equipment running in a factory).

Asset Management is an ideal area for a workplace-focused, apprenticeship model of learning as the apprentices are able to work specifically with the assets they will be custodians of in the future.

What career options are there?

- Infrastructure Asset Manager
- Civil Engineer
- Mechanical Engineer
- Electrical Engineer
- Water and Waste Engineer
- Environmental Engineer
- Natural Resources Engineer
- Structural Engineer
- Draughtsperson

Who is this degree for?

Anyone who is interested in embarking on/continuing on a career in the asset management of critical infrastructure.

This area is ideal for those who like project management and strategic thinking. You'll also need to like the idea of working as part of a larger team and will need to have the ability to relate to a range of people when communicating to them out in the field.

Learners can:

- already be employed in the industry
- be new to the industry
- want a change of career
- be a school leaver.

All learners must either be:

- in employment in a relevant industry (approved by the steering committee of the degree apprenticeship), or
- be taken on as an apprentice in such a role.

Depending on your level of experience, the path you take through this programme will vary. For example, school leavers will need to complete all components and more on-campus time versus those that are more experienced engineers who are already undertaking a daily engineering role and can provide portfolios of evidence to support their experience.

How does the apprenticeship model work?

We have Apprentice Managers whose primary role is to maintain the relationship between you (the apprentice), your workplace mentor and the Polytechnic (and local hubs). They will ensure that you are able to meet your learning objectives, monitor your progress and facilitate opportunities to complete learning elsewhere (through blended, online or at other sites as needed).

In addition, each course has its own Learning Leader/Lecturer who is available to support your learning outcomes. When a course has been completed and your portfolio of evidence is ready for moderation, the Apprentice Manager will facilitate the moderation panel meeting to assess this. You will also need to attend these assessment sessions to present your portfolio and to answer any questions. Moderators will include industry experts and Learning Leaders from the Polytechnic.

Local hubs will be set up where there are a pool of apprentices. These will be made up of local industry leaders and mentors. Hubs will provide support for all apprentices and members will provide field trips, presentations and work placement/exchange opportunities.

How will I learn?

Completed as an apprenticeship model, this degree will take a minimum of two to five years depending on your route of entry into the programme.

For those who have a New Zealand Diploma in Engineering (or equivalent): Two years

combination of industry project learning on the job along with blended online courses

For those with school entry: Three to five years combination of industry project learning on the job along with blended online courses

In general, the approach to learning is inquiry-based with a focus on practical experience. This will be shown by you performing set tasks to achieve your learning outcomes (solving problems, handling apparatus, using software programmes etc.)

You will be expected to research, explore concepts and develop conceptual understanding through workplace project experience or Polytechnic simulations/lab work. You will also have the opportunity to learn techniques of problem solving through the pencasts/video material as well as your own research activities.

What will I learn?

Key outcomes

You will:

- learn the fundamental principles of asset management, communications and economics for engineering and management roles
- further your problem-solving and critical thinking skills
- develop an awareness of the social and environmental impact of engineering
- understand principles underlying the technology in your area of specialisation
- develop modern design techniques in your area of specialisation
- learn how to use advanced technology to design and develop a project
- learn how to use data analytics for decision making.

Specialisations and courses

You'll first need to choose a specialisation - Civil, Mechanical or Electrical Engineering.

The concept of this programme is that it provides an opportunity to develop workplace capability and resilience. A lot of the following core courses will therefore be completed in your workplace:

- Engineering Communication
- Engineering Computing
- Engineering Mechanics
- Engineering Design and Drawing
- Engineering Management Principles
- Engineering Development Project
- Professional Engineering Practice
- Engineering Mathematics*

(*This course will be difficult to complete in the workplace so will be taught either through blended learning (face-to-face block courses or workshops) or via the face-to-face, traditional classroom-based sessions).

In addition to the courses above, you will also complete a number of electives or replacement courses of study (these vary per major) plus these five compulsory asset management courses:

- Introduction to Asset Management
- Asset Management Planning
- Data Analytics and Statistics for Asset Managers
- Risk Management
- Resource and Environmental Management

These five courses are delivered as a combination of industry approved micro-credentials and block courses attended by industry participants. This will enable you to have direct contact with industry professionals on a regular basis.

What's the entry criteria?

- NCEA Level 3
  - Three subjects at Level 3 including:
    - Physics with a minimum of 14 credits
    - Calculus with a minimum of 14 credits, **and**
    - one other subject with a minimum of 14 credits from the list of NZQA-approved subjects, **and**
  - 10 Literacy credits at Level 2 or above, made up of:
    - 5 credits in reading and 5 credits in writing, and
  - 10 Numeracy credits at Level 1 or above, made up of:
    - specified achievement standards available through a range of subjects OR
    - package of three numeracy unit standards (26623, 26626, 26627- all three required).

COVID-19 adjustments to NCEA requirements

- If you completed your NCEA Level 3 during 2020, you only need 12 credits per Level 3 subject (i.e. a total of 36 credits).
- If you completed your NCEA Level 3 during 2021, please visitthis page on the NZQA website. There are different adjustments depending upon which part of New Zealand you studied in.

- OR equivalent qualifications (may include University Bursary with 45% or more in both Physics and Calculus or Algebra, equivalent Cambridge score or equivalent International Baccalaureate).
- If you are a school leaver or adult applicantwith equivalent experience who does not meet all of the entry criteria, you may be given provisional entry at the discretion of the Head of College where it is considered that you have a reasonable chance of succeeding in this qualification.
- All applicants need to be in employment appropriate for a civil, mechanical or electrical major asset management pathway and have an employer that will support you in your study. Otago Polytechnic will determine the suitability of your employment in consultation with you and your workplace.
- If English is not your first language, you must provide:
  - New Zealand University Entrance OR
  - Overall Academic IELTS 6.0 (achieved in one test completed in the last two years)
    - Writing band 6.0
    - Speaking band 6.0
    - Reading band 5.5
    - Listening band 5.5, OR

- Acceptable alternative evidence of the required IELTS (see here for NZQA proficiency table and here for list of recognised proficiency tests).

If you need to improve your English Language skills, we offer a wide range of English programmes.

Selection procedure

Eligible applicants will be selected using the entry criteria. If the number of applications exceeds the number of places, applicants will be placed on to a waiting list in the order that they applied.

Student loans/allowances

Student loans and allowances are for domestic students only. For information about student loans and allowances please visit the Studylink website. It is important to apply for your student loan/allowance at the same time as you apply for this programme, due to the length of time Studylink take to process. Loan/allowance applications can be cancelled at any time if you decide to withdraw your programme application or if it is unsuccessful.

Intakes:

Course	Description	Dates
25-DIS-FYC	Distance	2025 Civil
25-DIS-FYE	Distance	2025 Electrical
25-DIS-FYM	Distance	2025 Mechanical