

2024

NZ Certificate in Mechanical Engineering

Level 3

If you want a career in welding, machining and fabrication, study the NZ Certificate in Mechanical Engineering and kick-start an apprenticeship.

You could earn a good wage as a technician doing something you really like. You will get real world workshop experience with local firms during work experience.

Location	Hawke's Bay and Tairāwhiti
Start	February and July*
Length	One year full-time
Contact	Jodi Te Hina - Hawke's Bay Phone: 06 830 1945 Email: jtehina@eit.ac.nz Ange Taylor - Tairāwhiti Phone: 06 869 3082 Email: ataylor@eit.ac.nz

* July intake available in Hawke's Bay only.
For NZ Citizens and Permanent Residents



TE AHO A MĀUI



TePūkenga

Engineer your mechanical trade career

At EIT | Te Pūkenga we don't just talk about doing things, we actually do them.

The NZ Certificate in Mechanical Engineering (Level 3) is project and task-based learning, and offers you real world experience.

By the time you have successfully completed this programme you will be able to demonstrate knowledge of the following:

- Working safely.
- Applying an understanding of relevant health and safety requirements and safety culture when carrying out engineering tasks.
- Applying basic trade related numeracy, literacy and visualisation skills to perform engineering tasks.
- Performing a defined range of engineering tasks according to instructions using relevant materials, tools and equipment.
- Setting up and carrying out a single process engineering job according to instructions.
- Applying an understanding of effective and efficient processes and principles to the engineering jobs being undertaken.
- Taking responsibility for the appropriate quality of own engineering work and making corrections as required.
- Participating and communicating effectively within an engineering team.

You are welcome to make an appointment to talk to a teaching staff member about this programme and to have a tour of the Trades workshops.

Please contact the Programme Administrator in your region for further information if required.

Career and study opportunities

This programme can lead to, but is not a pre-requisite for, the following:

- NZ Certificate in Mechanical Engineering (Level 4) with strands in fitting and machining, general engineering, machining, maintenance engineering, metal forming and tool making.
- NZ Certificate in Engineering Fabrication (Level 4) with strands in heavy fabrication, light fabrication and steel and construction.
- NZ Certificate in Mechanical Building Services (Level 4)

It is also your first step in many of the engineering trades.

Possible jobs and career opportunities can include apprenticeships in:

- Machining and toolmaking
- Maintenance and diagnostics
- Heavy and light fabrication
- The Armed Forces
- Heavy fabrication welding and engineering
- Sheetmetal fabrication and welding
- Construction welding
- Pipeline construction and welding
- Agricultural or general engineering

Industry-based training

You are required to complete a minimum of 80 hours with an engineering industry employer.



NZ Certificate in Mechanical Engineering Level 3, 120 credits

 Hawke's Bay and Tairāwhiti

 Full-time: 1 year

 Fee:
Visit fees.eit.ac.nz to see the fees for this programme

Timetable

Your study time will be made up of contact time (class times, tutorials, industry-based learning) and non-contact time (your own individual study time).

Contact time

On-campus classes are usually scheduled between 8.00am-4.30pm, three days per week (21 contact hours per week).

Non-contact time

You should plan to spend 15 hours per week on individual study.

Additional costs

- \$100 approximately for safety boots
- Electronic device - laptop or similar (optional)

Entry requirements

Standard entry

- NCEA Level 1 with 10 credits in Numeracy (algebra, trigonometry, measurement recommended) and 10 credits in Literacy, or be able to demonstrate equivalent knowledge and skills.

Non-standard entry

- Successful completion of the NZ Certificate in Foundation Skills (Automotive and Engineering) (Level 2) **and** successful completion of the alternative academic entry test; or
- Successful interview with a member of the academic staff **and** successful completion of the alternative academic entry test.

The alternative academic entry test will measure applicants' Literacy and Numeracy ability to ensure that it is of a level to cope with the demands of the programme.

The interview will allow parties to exchange information about what the programme both provides to, and requires of, its learners. Included in the interview will be discussion of possible career paths for the learner, motivation, physical and emotional requirements and the applicant's abilities, background, experiences and interests. Attendance of whānau members and/or supporting associates is encouraged at all interviews.

2024 Key dates

Intake one Starts: Monday, 5 February
Ends: Friday, 8 November

Intake two Starts: Monday, 22 July
Hawke's Bay only Ends: Friday, 11 April 2025

Semester breaks Intake one:
15-26 April
8-19 July
30 September-11 October
Intake two:
30 September-11 October
20 December-6 January 2025

English language entry requirements

If English is not your first language a level of English language fluency is required for the programme. This may be demonstrated through successful study of a programme in English, completion of a NZ Certificate in English Language L3, approved scores on IELTS tests (5.0 Academic with no band score lower than 5.0), completion of an EIT | Te Pūkenga assessment.

Literacy and numeracy skills

A Literacy and Numeracy assessment is part of the preparation for all Level 1 to 3 programmes. This is a national requirement from the Tertiary Education Commission (TEC). This information gives your tutors information on what you already know to help them provide the support that you may need in your studies.

There are two assessments. The first assessment will take place within the first three weeks of the programme. The second will be a week or two before you finish the programme. This final assessment will show how you have improved with your Literacy and Numeracy skills.

There will always be a tutor to help you when doing the assessment. The most important thing to know about this assessment is that you CANNOT fail. You will merely get information on your Literacy and Numeracy skills. The result will NOT have an impact on any of your assessment marks in your course work.

Assessments

This is a course-based programme. Assessments include assignments, exams and practical assessments. Assessments are continuous during the programme. An assessment portfolio will be created and maintained by the learner throughout the programme.

Facilities

The EIT | Te Pūkenga Trades and Technology Training complex offers learners a learning environment which gives them the opportunity to work in modern workshops modelled on real-world industry. The purpose built facilities give learners access to a comprehensive range of equipment for automotive, engineering, welding, carpentry and electrical trade training.

Experienced lecturers

At EIT | Te Pūkenga, you can be confident in the quality of our teaching and your learning experience.

EIT | Te Pūkenga is highly regarded in New Zealand for research excellence due to the quality of our community centred research, our publications and our external grant income provided by funding institutions who have confidence in our research capability. You can be confident your lecturers use the latest knowledge and research in their field of expertise to inform their teaching, and many are at the forefront of knowledge creation within their discipline area.

Name	Position
Patrick Doohan <i>Hawke's Bay</i>	Programme Coordinator
Shane Cameron <i>Tairāwhiti</i>	Site Coordinator

Programme information

Requirements to complete the NZ 2715 NZ Certificate in Mechanical Engineering (Level 3) are as follows.

There are eight (8) courses within the programme. All courses are compulsory, including a work experience component of 80 hours. (This is an important component as with most cases leads to employment.)

Course descriptions

Course no.	Brief description	NZQA level	No. of credits
MECH3028	Engineering Health and Safety <ul style="list-style-type: none">Awareness of own responsibilities in the workplace under relevant current Acts and Regulations.Emergency procedures; employee participation, incident and hazard reporting/management.Awareness of machine guarding principles and requirements; working safely and contributing to a safe environment; cultural safety and awareness; hazard identification, assessment and control, machine isolation, reporting, audit and Personal Protective Equipment (PPE) requirement.Tools machinery, electrical chemical, gas, fumes, confined spaces, height.Safety of person (clothing, hair, jewellery); workshop cleanliness; worksite procedures in event of incident/accident; avoiding OOS, lifting, ladders; dangers of drug/alcohol in presence of machinery; material safety data sheets; emergency shutdown procedures; assessment and management of an injured person's condition; provide basic life support.	3	10
MECH3029	Engineering Calculations and Drawings <ul style="list-style-type: none">Basic knowledge of trade calculations and units of measurement for mechanical engineering; basic arithmetic; fractions; area and volume.Basic metric and imperial units including base and derived quantities and Pythagoras' Theorem; basic trigonometry to solve lengths and angles of right angle triangles; use tables and charts; simple machines; knowledge of trade-related terminology; production and interpretation of basic engineering drawings; first and third angle orthographic projection, isometric, oblique, dimensions, symbols, line weights, scale, labelling; orientation, proportion, dimensions, related notes; sketching techniques; introduction to basic CAD; basic geometric construction methods.	3	15
MECH3030	Mechanical Engineering Workshop Skills <ul style="list-style-type: none">Basic understanding of engineering materials. Production, physical characteristics, selection and application of engineering materials.Engineering metals: types, properties, characteristics, selection, use and processing. Pure metals/alloys/ferrous/non-ferrous. Factors influencing selection of engineering metals. Basic workshop heat treatment.Hot and cold working; corrosive processes and prevention, awareness of relevant standards; ability to correctly and safely use hand tools, measuring and marking out equipment; general understanding of marking out equipment; simple measuring devices selection, use and care; basic hand tool selection, use and care; mechanical assembly and fastener; fastener uses, types and range; mechanical components assembled, tested, tolerances stored; material handling.Basic materials handling and the use of equipment required to handle the materials; lifting and slinging equipment within a workshop/worksite.	3	15

Course no.	Brief description	NZQA level	No. of credits
	Engineering Machining		
MECH3031	<ul style="list-style-type: none"> Engineering dimensional measuring equipment selection, use and care. Micrometers, Verniers, DTI. Understanding of basic tolerances. Application of calculations and measurements knowledge; task planning. Monitoring the condition and safety of tools and equipment; carrying out all work efficiently and according to specifications; working within limitations; safety practices in a workshop; PP machines, centre lathe milling, bench grinder, basic surface grinding. 	3	20
	Engineering Fabrication		
MECH3032	<ul style="list-style-type: none"> Fabrication, demonstrate introductory knowledge of fabrication processes; metal selection, layout, marking, cutting, bending, forming, assembly; cutting, bending, and joining allowances; fabricate simple objects; simple regular transitions; power tools; hazards associated with portable hand held engineering power tool use; portable hand held engineering power tools are selected for the task. 	3	20
	Welding		
MECH3033	<ul style="list-style-type: none"> Monitoring the condition and safety of tools and equipment; safety practices in a workshop PPE; hazards identification – MMAW, GMAW, and GTAW; down hand positions GMAW and MMAW; stainless steel sheet weld using GTAW process; stainless steel sheet in the range 1-3mm positions 1G, 2F, 2G, 3F, 3G all to industry standards; basic distortion control, basic weld faults and correction. 	3	20
	Mechanical Engineering Process and Quality		
MECH3034	<ul style="list-style-type: none"> Overview of manufacturing processes; workplace organisation (sort, set in order, shine, standardise, sustain); basic understanding of costing, quoting; workshop ergonomics; time management, measurable outcomes; trade practice; lean manufacturing (internal/external customer's needs); identification and elimination of wasteful processes. Just in time; working to an acceptable standard individually and as a team. Awareness and application of simple inspection techniques; damage minimisation practices; understanding of and basic application of quality assurance, quality control, professional practice. Basic knowledge/exposure to CNC. 	3	10
	Mechanical Engineering Communication		
COMM3011	<ul style="list-style-type: none"> Techniques to confirm and clarify instructions; tail gate meetings (hazard identification); cultural awareness and safety; professional practice, i.e. appropriate language, up and across organisation, orderly behaviour; basic workplace documentation: job sheets, time sheets, CV writing and individual career planning. 	3	10

EIT is now part of Te Pūkenga

Te Pūkenga brings together New Zealand's Institutes of Technology, Polytechnics, and Industry Training Organisations to build a network of on job, on-campus and online learning. The services we offer not only remain, they are strengthened by being part of the extensive Te Pūkenga network around the country. Your enrolment for study in 2024 will see you enrolling with Te Pūkenga and becoming part of the extensive Te Pūkenga network around the country.

The experience you need & the support to succeed

When you study at EIT | Te Pūkenga you'll get the kind of experiences that will help you gain the knowledge and skills to get ahead.

You'll also be supported by lecturers and tutors who are here for you, within a learning environment where you are treated as an individual, not just a number.

They'll know your name and you'll receive one-on-one attention to make sure you get the support to succeed.



How to enrol

There is an easy 3-step process to follow when enrolling at EIT | Te Pūkenga.

Step 1

Check out eit.ac.nz to see the programmes available for you to study. A copy of the course information for each programme is available on our website.

Step 2

You can now use your RealMe verified identity to apply for study at EIT | Te Pūkenga. If you use your RealMe verified identity you will no longer be sent a copy of your application form to sign. You also will not need to provide us with a copy of your primary ID.

If you apply online without using RealMe then you will be sent a summary of your enrolment to check and sign. It will also include course selection forms which you need to complete and return. Your enrolment cannot progress until you have sent the summary and forms back to us.

You can also apply using a paper enrolment form. Please call us on **0800 22 55 348** and we will send you one out.

You will receive an acceptance letter from your Faculty with programme information. This will include the start date of your study and any special information regarding your programme. Depending on your chosen programme of study, you may be invited to attend an interview before you are accepted.

Step 3

Arrangement for full payment of enrolment fees must be made before the start of your programme. You will receive an invoice with payment details.

Fees-free government scheme: Tertiary education is fees-free for eligible domestic tertiary students. To check if you are eligible, go to FeesFree.govt.nz and enter your National Student Number (NSN). If you are not eligible you will be responsible for paying your fees.

Scholarships and grants: Scholarships and grants make life easier by helping to cover your fees, other costs and living expenses while you study. You don't always need to be an academic high-flyer to qualify. You can find out more about scholarships and other options for paying your fees at eit.ac.nz.

StudyLink: If you need to pay for your own study you can choose to apply for your Student Loan and Student Allowance with StudyLink. You should do this early, even if you haven't yet been accepted on your programme. You can change your details later if anything changes. Visit studylink.govt.nz to find out more about StudyLink.

Student services levy

The student services levy is a compulsory non-tuition fee that is charged to students enrolled at EIT | Te Pūkenga. The levy is to contribute to the provision of quality student services that support learning. The funds received by EIT | Te Pūkenga from the levy are ring-fenced, meaning they can only be spent on student services.

Student loans and allowances

StudyLink is a service of the Ministry of Social Development. Apply well before your programme begins (even if you haven't been accepted yet) so you'll be ready to get your payments when you need them most.

Check out what you qualify for at studylink.govt.nz.



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