New Zealand Certificate in Mechanical Engineering (Level 3)

Domestic Fees
$10,010.00

Duration
1 year full-time

witt.ac.nz

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WESTERN INSTITUTE OF TECHNOLOGY AT TARANAKI
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New Zealand Certificate in Mechanical Engineering (Level 3)

You will gain the basic workplace skills for mechanical engineering, welding and fabrication and related trades. It may be used as the first stage of an apprenticeship or further training. You'll develop a full range of skills in health and safety, machining, maths and drawings, workshop skills, fabrication of materials and a range of welding techniques. There is plenty of hands-on learning carried out during this practical engineering course.

You will learn how to:

- Work safely, applying an understanding of relevant Health and Safety requirements, job ergonomics, risk assessment, and knowledge of safety culture, when carrying out engineering tasks
- Apply numeracy to perform basic trade calculations to determine angles, lengths, areas, volume, and conversions of units of measurement, related to engineering tasks
- Use basic trade terminology when communicating information or workplace instructions related to performing engineering tasks
- Use visualization skills to produce and interpret basic engineering sketches, to perform engineering tasks
- Interpret basic knowledge of engineering materials in relation to mechanical properties, strength, and their uses
- Perform a defined range of engineering tasks according to instructions using relevant materials, correct and safe use of tools, and equipment
- Apply knowledge of marking out, marking out and measuring equipment calibration, and the application of basic tolerances to manufacture components
- Set up and carry out a single process engineering job, efficiently using the correct tools and equipment required to carry out the work and monitoring their condition for safe and effective operation according to instructions
- Apply knowledge of effective and efficient work practices for specific manufacturing processes used to complete engineering jobs undertaken to ensure delivery in full, on time and to specifications.
- Work to an acceptable standard with responsibility for the quality of own engineering work by following quality systems, damage minimisation practices, simple inspection techniques, and make corrections as required
- Participate and communicate effectively with awareness of other cultures and languages, to confirm and clarify instructions, communicate health and safety matters, and complete basic workplace documentation, within an engineering team

Courses

MECH3028

Engineering Health and Safety

This course aims to develop ākonga knowledge and skills in relevant health and safety legislation so they can apply appropriate work safety practices and procedures when carrying out tasks in an engineering environment.

MECH3029

Engineering Calculations and Drawing

The aim of this course is to develop basic trade related numeracy, literacy and graphic visualisation skills to produce engineering tasks.

MECH3030

Mechanical Engineering Workshop Skills

The aim of this course is to develop basic engineering workshop skills in using simple measurement, lifting and moving loads and materials as well as develop knowledge of common engineering materials.

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MECH3031

Engineering Machining

The aim of this course is to develop skills in basic machining and workshop practices including applying appropriate engineering work practices when using measuring equipment to perform mechanical machining operations.

MECH3032

Engineering Fabrication

The aim of this course is to develop basic fabrication skills and techniques as well as develop good working practices when using engineering power tools.

MECH3033

Welding

The aim of this course is to develop and apply basic welding principles and skills as well as health and safety processes when welding materials.

MECH3034

Mechanical Engineering Processes and Quality

The aim of this course is to develop ākonga knowledge of effective and efficient processes as they take responsibility for their own work in the carrying out basic engineering tasks.

MECH3046

Mechanical Engineering Communication

The aim of this course is to consistently apply effective communication techniques by participating in a team environment within an engineering workshop.

Career Options

Graduates of this qualification will be able to work (under limited supervision) in an operator or trade assistant role in their area of specialisation, in the mechanical engineering, construction, mechanical building services, manufacturing, or fabrication industries.

Roles may include: CNC Machine Operator, Mould and Core Maker, Furnace Operator, Machine Operator, Specialist Production Welder, Metal Worker/Fabricator, Ducting Fabricator, Pipe Fitter/Welder, Metal Polisher and Pattern Maker Trade Assistant.

Academic 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

Additional Course Related Costs

- Overalls (Cotton)
- Safety Boots (Steel capped)
- Safety Glasses
- Ballpoint pen
- Scientific Calculator, Casio fx-991EX or similar
- Windows laptop (preferably) or an android tablet (These are Recommended)

If you have any questions about this list please discuss this with your tutor.

- For student safety, personal protection equipment (PPE) is mandatory for certain tasks.
- WITT has a limited supply of laptops for students to use. Students can apply only when their enrolment has been accepted.
- Students may qualify for a Student Loan to cover these course-related costs.
- Security provisions and insurance cover are the responsibility of the students. WITT accepts no responsibility for the loss or damage of personal tools and equipment.

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