

### 1. PROGRAMME DETAILS

#### 1.1 Programme title

Introduction to Mechanical Engineering

#### 1.2 Programme code

TBA

#### 1.3 Level of programme

2

#### 1.4 Effective date

These Programme Regulations are effective from January 2018.

#### 1.5 Programme Version

1

#### 1.6 Credits

80

#### 1.7 NZSCED Subject Classification

030701

#### 1.8 Course Fees

There are no course fees or compulsory course costs. Tertiary Education Commission (TEC) eligibility applies.

#### 1.9 Qualification

Code	Qualification	Level	Version	Minimum Credits
NCEP2T	Vocational Pathways – Manufacturing and Technology	2	1	80

### 2 PROGRAMME AIMS AND OBJECTIVES

#### 2.1 Aim

This is an entry level programme for students with an interest in the manufacturing and technology industry to experience some introductory skills to welding and mechanical engineering before committing to employment or further study at Level 3.

#### 2.2 Content

Graduates will gain an entry level range of skills in welding and engineering. Some of these skills will include the ability to demonstrate knowledge of:

- Select, use, and care for, engineering hand tools
- Safety on engineering sites
- Safe welding procedures under supervision
- Engineering materials

On completion of this programme, students will have the necessary basic knowledge and skills for working safely in manufacturing workshops, with regards to health and safety practices, introduction to welding, use of power and hand tools

Students may also be able to gain credits and work towards their NCEA Level 2.

Graduates will be able to apply progress to higher levels of learning such as those listed below:

- New Zealand Certificate in Mechanical Engineering (Level 3) [Ref: 2715]
- Vocational Pathway – Manufacturing and Technology (Level 3)

### Graduate Profile

A graduate of this programme will be able to demonstrate skills and underpinning knowledge in general mechanical engineering skills.

A graduate will have demonstrated an ability to be safe, efficient and consistent in using a specific range of engineering and welding equipment and processes. A graduate will be able to work under supervision and/or assist others to undertake specific engineering related tasks.

As well as:

- Work safety, applying an understanding of relevant Health and Safety requirements and safety culture, when carrying out mechanical engineering tasks
- Apply basic trade related numeracy, literacy, and visualisation skills to perform engineering tasks

### 3. Programme Length and Delivery Modes

#### 3.1 Programme Length

This programme will be delivered on the following basis, according to the mode of delivery:

<b>Delivery Method</b>	Face to Face – Classroom Practical – Workshop based
<b>Type of Study</b>	Full time
<b>Course Length:</b>	
Total weeks	25 weeks
Recess	1 week
Teaching weeks	26 weeks
<b>Average hours per week:</b>	
Classroom / Workshop – face to face	32 hours
Practical	-
Total hours per week	32 hours
<b>Total programme hours</b>	800 hours
<b>Intake One</b>	
Start Date	29th January 2018
End Date	27th July 2018
<b>Intake Two</b>	
Start Date	4 <sup>th</sup> June 2018
End Date	14 <sup>th</sup> December 2018

#### 3.2 Time limits for completion of the programme

26 weeks. Includes 1 week of recess and 25 teaching weeks.

##### Entry Point

3.2.1 Students must enter the qualification within the first 3 weeks of the start date. Students must start and finish within the calendar year

##### Exit Point

3.2.2 After 25 weeks or exit on completion if sooner.

### 3.3 Overview of Qualifications:

Course Code	Course Name	Level	NZQA Credits
<b>Introduction to Mechanical Engineering</b>			
<i>Compulsory – Must complete all courses</i>			
VPME2.001	Health and Safety	2	8
VPME2.002	Hand and Power Tools	2	8
VPME2.003	Engineering Sketches	2	11
VPME2.004	Mechanical and Fabricated Components	2	2
VPME2.005	Engineering Materials	2	3
VPME2.006	Measuring and Marking Equipment	2	6
VPME2.007	Fabrication Processes and Operation	2	9
VPME2.008	Mechanical Fasteners	2	3
VPME2.009	Lifting Operations	2	2
VPME2.010	Calculations	2	8
VPME2.011	NCEA Literacy	2	10
VPME2.012	NCEA Numeracy	2	10
<b>Total Credits</b>			<b>80</b>

## 4 PROGRAMME STRUCTURE

Schedule of courses including Unit Standards and Programme Requirements

<b>Introduction to Mechanical Engineering</b>				
<b>UNIT STANDARDS No.</b>	<b>COURSE AND UNIT STANDARD TITLES</b>	<b>LEVEL</b>	<b>VERSION</b>	<b>NZQF CREDITS</b>
<b>Core Compulsory</b> <i>(must complete all courses)</i>				
<b>VPME2.001</b>	<b>Health and Safety</b>	<b>2</b>		<b>8</b>
21911	Demonstrate knowledge of safety on engineering worksites	2	3	2
21912	Apply safe working practices on an engineering worksite	2	3	2
21907	Demonstrate and apply knowledge of safe welding principles and quality assurance under supervision	2	3	4
<b>VPME2.002</b>	<b>Hand and Power Tools</b>	<b>2</b>		<b>8</b>
2395	Demonstrate and apply knowledge of the selection, use, and care of engineering hand tools	2	9	4
2396	Demonstrate and apply knowledge of the selection, use, and care of portable hand held engineering power tools	2	7	4
<b>VPME2.003</b>	<b>Engineering Sketches</b>	<b>2</b>		<b>11</b>
29655 (2430)	Manually produce engineering sketches	2	2	3
2431	Manually produce and interpret simple engineering component drawings under supervision	2	8	8
<b>VPME2.004</b>	<b>Mechanical and Fabricated Components</b>	<b>2</b>		<b>2</b>
2387	Assemble mechanical components under supervision	2	6	2
<b>VPME2.005</b>	<b>Engineering Materials</b>	<b>2</b>		<b>3</b>
29549 (20917)	Demonstrate basic knowledge of the mechanical properties and selection of engineering materials	2	1	3
<b>VPME2.006</b>	<b>Measuring and Marking Equipment</b>	<b>2</b>		<b>6</b>
4435	Select, use, and care for engineering dimensional measuring equipment	2	8	3
4436	Select, use, and care for engineering marking-out equipment	2	7	3
<b>VPME2.007</b>	<b>Fabrication Processes and Operation</b>	<b>2</b>		<b>9</b>
29670 (25075)	Demonstrate knowledge of fabrication machinery, material, and processes	2	1	3

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UNIT STANDARDS No.	COURSE AND UNIT STANDARD TITLES	LEVEL	VERSION	NZQF CREDITS
29730 (25075)	Apply good work practices when performing basic fabrication operations under supervision	2	1	6
<b>VPME2.008</b>	<b>Mechanical Fasteners</b>	<b>2</b>		<b>3</b>
29674 (21909)	Demonstrate knowledge of mechanical fasteners used in mechanical engineering	2	1	3
<b>VPME2.009</b>	<b>Lifting Operations</b>	<b>2</b>		<b>2</b>
21913	Lift loads in engineering installation, maintenance, and fabrication work	2	4	2
<b>VPME2.010</b>	<b>Calculations</b>	<b>2</b>		<b>8</b>
29397	Demonstrate knowledge of basic trade calculations and units of measure for mechanical engineering trades	2	1	4
29398	Apply knowledge of basic trade calculations for mechanical engineering trades	2	1	4
<b>VPME2.011</b>	<b>NCEA Literacy</b>	<b>2</b>		<b>10</b>
26622	Write to communicate ideas for a purpose and audience	1	4	4
26624	Read texts with understanding	1	4	3
26625	Actively participate in spoken interactions	1	5	3
<b>VPME2.012</b>	<b>NCEA Numeracy</b>	<b>1</b>		<b>10</b>
26623	Use number to solve problems	1	4	4
26626	Interpret statistical information for a purpose	1	4	3
26627	Use measurement to solve problems	1	4	3

### 4.1 Prerequisites

Health and Safety Course **VPME2.001** (comprising standards 21911, 21292, 21907) will be taught and assessed prior to learners undertaking any practical learning.

## **5 REQUIREMENTS FOR AWARD OF QUALIFICATION**

### **5.1 Credit values available**

Students must achieve 80 credits to be awarded the Vocational Pathways Manufacturing and Technology Award. The Vocational Pathways Award also includes 10 credits for Literacy and 10 credits for Numeracy. Students may also be credited with NCEA Level 2 if they meet this criteria.

### **5.2 Attendance criteria**

It is a requirement students attend all theory, possible practical training days and assessment days as scheduled in order to enable competencies to be developed and demonstrated.

Tutors will inform students during the enrolment process of their expectations about attendance and the implications if they are not met. Theory components of this programme are delivered during class contact time, attendance is compulsory.

If students do not ring or text in stating reason, they will be marked absent. The procedure for absences is:

- After first absence; student will be reminded of attendance criteria
- After second absence; student will be given a verbal warning from Tutor/s
- After third absence; student will be given a written warning from Management
- After fourth absence; student will be withdrawn

### **5.3 Work experience**

Work experience applies where a student is placed in a work environment to gain relevant skills, knowledge and experience.

Trainees will not be required to undertake work experience and practical training will take place in a fully equipped workshop.

However some practical components of the practical unit standards may be delivered and assessed in a workplace if required. Formative assessment of practical unit standards will start from the moment students are shown practical tasks as recorded in the Task Record Book.

All practical unit standards are discussed during face to face class time in conjunction with related theory unit standards, therefore transferring practical knowledge.

Responsibilities of all parties to Work Experience arrangements are detailed in the VETEL Workplace Contract, which are signed by a representative of VETEL and the Work Experience Provider.

Suitable work placement options may include:

- Work placements in private businesses with whom a VETEL Training Workplace Contract has been signed
- Work placement completed within a student's existing network or part-time employment, following approval by Valley Education & Training

### **5.4 Time limits for completion of the programme**

It is expected that students will complete this programme within 25 weeks. Students are required to complete this programme within one year of the date of first enrolment or must have completed this programme of study before the 31<sup>st</sup> December; there will be no extensions after this date.

## 5.5 Practical and Theory Assessment Schedule

Month	Theory	Practical <i>These unit standards are practical and run for the duration indicated</i>
Jan		
Feb	21911, 21907	21912
March	2395, 2396	4435, 4436, 29655 2431, 2387, 21913, 29730, 29398
April		
May	29549, 29670	
June		
July	29394, 29398	
Repeat above for second intake		

## 6 ENTRY AND SELECTION CRITERIA

### 6.1.1 Entry Criteria

- Age 16 years at the time of commencing study
- Low or no previous qualification at level 2
- NZ Citizen and / or permanent resident
- An interest in mechanical engineering

### 6.1.2 English language

Applicants whose first language is not English, or who come from a country where the language of instruction in schools or other teaching institutions is not English, are required to provide evidence of having passed such a test of English language as is detailed in Policy and Procedure English Language Proficiency.

### 6.1 Selection criteria

Entry to the programme will be in order of receipt of completed enrolments. Applicants should have a desire to work in the mechanical engineering industry.

All applicants will be required to attend a formal interview with the course Tutor. Where there are more applicants than places available, a waiting list will be kept or you will be referred onto other programme with VETEL or any other training provider.

### 6.2 StudyLink – Student Allowance 18+

Students aged 18 and over, enrolling on this Fees Free programme of study may test their eligibility for the StudyLink student allowance.



## **7 ASSESSMENT OF PRIOR LEARNING (APL)**

### **7.1 Provisions for advising prospective applicants**

Opportunities for Assessment of Prior Learning are advised in the Student Handbook and VETEL's Quality Management System: Procedure Assessment of Prior Learning.

Assessment of prior learning will only be granted to students who demonstrate that they have met the required performance criteria. Students are required to undertake an assessment (theory and/or practical) to determine their level of competency.

A Record of Learning is required for cross credit or credit transfer arrangements.

### **7.2 Provisions for application and consideration**

A completed APL application form must be submitted to VETEL administration staff, Tutor or delegated equivalent in the first instance.

## **8 ASSESSMENT REQUIREMENTS**

### **8.1 Assessment method**

The assessment contained within this programme is competency based. This qualification will be delivered face to face with theory and practical assessments as well as some self-directed learning required by students.

Practical assessments will be assessed via practical tasks matching the performance criteria through workshop activities and / or workplace sponsors.

### **8.2 Requirements for submission/return of assessed work**

Assessments must be submitted on the due date and be completed by the individual seeking credit for that work. Under normal circumstances assessed work will be handed back within two weeks of the due date.

### **8.3 Departures from prescribed assessment**

Students with disabilities or recognised conditions of impairment may receive assistance during assessment.

In negotiated circumstances, with the prior approval of the Manager, students may be able to complete an assessment in Te Reo Maori, or in sign language.

### **8.4 Reassessments and resubmissions**

Students are required to meet all the performance criteria in order to demonstrate competency in each element of a unit standard. Should a trainee not meet all the criteria, they will be given the opportunity for a reassessment of the particular area in which they did not demonstrate competency.

Reassessment may be undertaken by students in accordance with VETEL's Assessment Policy.

### **8.5 Appeal of assessments**

Students may lodge an appeal in accordance with VETEL Policy and Procedure Academic Appeals.

## 8.6 Grades

The following grades will be used.

Grade	Legend	Definition
A	Achieved	Able to follow and complete all instructions given by the assessor or assessment tool. The assessor must make the final judgment
NA	Not Achieved	Failed to achieve competency standards
RPL	Recognition of Prior Learning	Formally acknowledges the value of a trainee's prior learning, whether formal or informal, by assessing the prior learning of the purpose of considering the grading of credit towards a unit of learning, course or programme in which a trainee wishes to enrol
CC	Cross Credit	Application towards one qualification of credit gained for another qualification with the same provider
CT / APP	Credit Transfer Accredited by Another Provider	Application towards one qualification of credit gained for another qualification with a different provider
RCC	Recognition of Current Competency	To obtain RCC for the practical unit standards, the candidate must provide evidence that all competencies have been satisfactorily met

## 8.7 Results

Recording and reporting of results is in accordance with VETEL's Policy and Procedure Reporting and Certification.

## 8.8 Weighting of course work and final examinations to final grades

Coursework comprises 100% of the final result.

## 8.9 Aegrotat Passes

Where a student is unable to undertake an assessment (for justified reasons such as medical conditions) under prescribed conditions e.g. field trip setting, marae stays, the Tutor may approve competency being assessed under alternative conditions, e.g. delaying assessment date for students, oral assessment on main points of performance criteria, rescheduling field trips or joining the student in with another class.

## 9 HEALTH AND SAFETY

### 9.1 Requirements and responsibilities

Students must comply with any health and safety requirements for specific courses as detailed in the Student Manual. This is in addition to health and safety requirements for VETEL delivery sites and for work experience/work placement sites as are detailed in:

- VETEL Student Code of Conduct
- VETEL Policy and Procedure Health and Safety (applying to delivery on the VETEL campus only)
- Valley Education and Training Policy and Procedure Health and Safety Policy.
- Valley Education and Training Policy and Procedure On-job Assessment and/or Work Experience Policy

- Valley Education and Training Health and Safety Management System and Health and Safety Staff User Manuals for VETEL Campuses and while visits are being used for practical demonstrations and course work.
- OSH Manuals and Requirements of Work Placement and Work Sites

## **10 TRANSITION ARRANGEMENTS**

### **10.1 Description of any transition arrangements**

There are no transition arrangements for this programme.

## **11 MONITORING AND MODERATION**

### **11.1 Provisions for external monitor**

External moderation will be attended to by VETEL staff as required by the relevant ITO, or other SSB (e.g. Competenz).

### **11.2 Moderation Plan**

Internal moderation is completed as per VETEL's Moderation Policy. External moderation is carried out in accordance with the relevant Consent and Moderation Requirements (CMRs) and in conjunction with VETEL's external moderation requirements in respect of those CMRs or NZQA moderation requirements.

## **12 OTHER REQUIREMENTS OF THE PROGRAMME**

### **12.1 Special requirements**

There are no special requirements for this programme.

### **12.2 Exceptions to programme regulations**

The Academic Board will consider exceptions to the Programme Regulations where unforeseen circumstances suggest that students might be disadvantaged by existing Regulations.