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# **NZ DIPLOMA IN ENGINEERING (MECHANICAL)**

## **UNIFIED**

### **2012 Programme Information**



## CONTENTS

<b>1. BACKGROUND .....</b>	<b>2</b>
<b>2. A CAREER IN MECHANICAL ENGINEERING.....</b>	<b>2</b>
<b>3. ADMISSION CRITERIA.....</b>	<b>2</b>
SPECIAL ADMISSION CRITERIA.....	2
ENGLISH LANGUAGE REQUIREMENTS .....	3
<b>4. PROGRAMME STRUCTURE.....</b>	<b>3</b>
<b>5. METHOD OF DELIVERY .....</b>	<b>4</b>
5.1 BLOCK COURSES .....	4
5.2 BLOCK COURSE FORMAT.....	4
5.3 COURSE MANAGEMENT SYSTEM .....	4
<b>6. RECOGNITION OF PRIOR LEARNING (RPL) .....</b>	<b>5</b>
<b>7. TRANSITION ARRANGEMENTS .....</b>	<b>5</b>
<b>8. HOW TO APPLY .....</b>	<b>6</b>
<b>9. CONTACT DETAILS FOR INQUIRIES.....</b>	<b>6</b>
ENTRY ASSESSMENT FORM.....	7

# **NZ Diploma in Engineering (Mechanical) - Unified**

**[Programme Code: ND0534]**

## **1. BACKGROUND**

The Unified Diploma came into force in 2011. It is a level 6, 240 credit qualification and retains its name of Diploma in Engineering (Mechanical). Differences of note from the previous structure are:

- Programme content has been re-structured into 16 courses (14 compulsory plus 2 electives at Level 6)
- All courses are of 15 credit value
- Four of the compulsory courses are common to the mechanical, electrical and civil diplomas
- The NZ Board of Engineering Diplomas (NZBED) oversees the Civil, Mechanical and Electrical Diplomas.

Transition arrangements for students who started the Programme under the previous structure are discussed in Section 7.

The NZ Diploma in Engineering (Mechanical) [DipEng (**Mech.**)] undertaken on a full-time basis takes about 2 years to complete, depending on a student's entry level.

NZIHT, through the Western Institute of Technology at Taranaki (WITT), offers this programme on a part time basis using a mixed-mode delivery format. This method of delivery caters specifically for the needs of students who are unable to attend a conventional full-time programme. More details on the method of delivery are given in Section 5.

## **2. A CAREER IN MECHANICAL ENGINEERING**

The NZDE (Mechanical) is a general qualification in the mechanical discipline. Holders of this qualification are people who possess a sound knowledge of mechanical engineering fundamentals, as well as being able to demonstrate a range of technical and practical skills in specialist areas. The qualification provides a distinct career path that could include detailed design, advanced testing, maintenance, project management, production management, operations management or assisting professional engineers.

## **3. ADMISSION CRITERIA**

### **Minimum Academic Entry Criteria**

For entry to this programme, applicants are required to have –

- A minimum total of 48 credits at level 2 in four subjects including at least 12 credits in mathematics, **or**
- equivalent qualifications (eg International Baccalaureate or Cambridge), **or**
- equivalent credits from appropriate trades training and/or demonstrated skills and experience.
- Minimum of 8 literacy credits at level 1 or higher including 4 reading and 4 writing.

### **Special Admission Criteria**

Applicants who do not meet the requirements for normal admission may be admitted to the programme if they undertake the Certificate in Engineering Technology and successfully complete the prescribed requirements.

## English Language Requirements

In addition, the following requirements apply to applicants in both admission categories:

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 met certain minimum English language requirements.

- Overall Band Score (Academic) of 6.0 IELTS, with no individual score less than 5.5, or equivalent.

## Acceptance

Candidates wishing to enrol for the NZ Diploma in Engineering (Mechanical) must complete the Entry Assessment Form and return it with supporting documentation to the Programme Administrator for evaluation.

Following the review of the applications by the Programme Manager each candidate will be informed in writing of the result. There is a requirement that candidates accepted onto the Programme must, for the purposes of obtaining the Diploma, complete a Western Institute of Technology at Taranaki (WITT) Student Study Contract (enrolment) form.

Applicants will receive the Student Study Contract for WITT when they are notified of their acceptance onto the Programme.

Please note a student is confirmed onto the Programme when NZIHT has received the Student Study Contract from the student. A confirmation letter giving final course details will be issued prior to the start of the first block course.

## 4. PROGRAMME STRUCTURE

At the lower levels of study, students receive a fundamental grounding in engineering principles and practice. This broad-based grounding is extended at higher levels in specialist fields.

The length of **Study blocks** varies according to the credit rating and the nature of individual courses.

**Table 1 – NZ Diploma in Engineering (Mechanical) Programme**

Code DEM	Course 14 Compulsories (Bold) + TWO electives	C or E <sup>1</sup>	Level	Pre - or Co-requisites
4.101	<b>Engineering Fundamentals</b>	C	4	
4.102	<b>Engineering Mathematics 1</b>	C	4	
4.103	<b>Technical Literacy</b>	C	4	
6.101	<b>Engineering Management</b>	C	6	
6.399	<b>Engineering Project (Mechanical)</b>	C	6	
3.301	<b>Engineering Practice</b>	C	3	
4.301	<b>Engineering CAD</b>	C	4	
4.302	<b>Mechanics</b>	C	4	
4.303	<b>Material Properties</b>	C	4	
5.301	<b>Thermodynamics and Heat Transfer</b>	C	5	
6.301	<b>Fluid Mechanics</b>	C	6	
5.302	<b>Strength of Materials 1</b>	C	5	
5.303	<b>Manufacturing Processes</b>	C	5	
5.304	<b>Electrical Fundamentals</b>	C	5	
6.302	Mechanics of Machines	E	6	
6.308	Strength of Materials 2	E	6	DE5302
6.309	Advanced Thermodynamics	E	6	DE5301
6.315	Fluid Power	E	6	
6.419	Maintenance Engineering Management	E	6	
<b>C = Compulsory</b>		<b>E = Elective</b>		

## 5. METHOD OF DELIVERY

### 5.1 Block Courses

A combination of contact sessions, called **Study Blocks**, and structured self-directed study is used to deliver the programme. The self-directed study component is undertaken in the student's own time at home with the aid of course notes and a proposed work programme. Interaction with the course presenter as and when required is via e-mail or telephone. Interaction with the course presenter and fellow students can also be made through the Course Management System website (NZIHTCMS).

The length of the **Study Blocks** varies according to the credit rating and the nature of individual courses.

This method of delivery enables candidates to acquire the qualification on a part-time basis. A person in full-time employment, who is willing to work hard, should be able to undertake 2 to 3 courses per semester. On this basis the programme can be completed in about 4 to 5 years.

The current venues where Study Blocks are delivered, subject to demand, are Hamilton, Christchurch, Auckland and Palmerston North. Other venues will be considered based on demand.

### 5.2 Block Course Format

The learning activities for each course comprise the following components:

1. Contact session(s), referred to as **Study Blocks**, totalling between 5 and 8.5 days approximately, normally broken into two blocks of equal duration per course.
2. Structured **self-directed study** involving Self Evaluation Exercises and Assignments.
3. Final Examination.

The Study Block **time tables** for courses offered in 2012 are given in **Appendix A**.

While the block course format, in essence, is a part-time study format specifically designed to cater for persons who are not in a position to attend full-time programmes, it is not a pure "correspondence course".

The course materials have not been designed to be completely "stand-alone". The Study Blocks fulfil an important supplementary role to the self-directed study component. Experience has shown that block course attendance is important for all courses.

- where there is a strong analytical content (e.g. Mathematics, Engineering Fundamentals) and
- where labs and/or practicals are involved (e.g. Strength of Materials)

There are, however, circumstances where attendance of block courses can be waived by the Programme Manager, for instance where students can offer prior learning or appropriate work-place experience *in lieu*. Please contact the course administrator for more information.

### 5.3 Course Management System

Candidates accepted onto the Programme need independent access to the internet. NZIHT has introduced a Course Management System Website (CMS for short) to facilitate the interaction between fellow students, tutors and administrators of the NZ Dip Eng (Mechanical) Programme.

The address is [www.nzihtcms.co.nz](http://www.nzihtcms.co.nz)

CMS is a website where:

- Administration staff post some of the admin resources commonly required by the student and communicates logistics, including venue and timetable information
- Students can ask course related questions of the course presenters,

- Course presenters can discuss course related matters or disseminate additional information (including model answers for tests and assignments),
- Question-and-answer discussion trails (discussion forum) can be facilitated among members of a class group (including the course presenter),
- Marks for tests and assignments are posted during the progress of courses.

Once enrolled with NZIHT, students are provided with a user name and initial password to gain access to the site and its facilities.

## 6. RECOGNITION OF PRIOR LEARNING (RPL)

Candidates who can provide evidence of prior study, or work related experience, that shows a direct correlation to a course offered in the programme may be eligible for cross credit/credit transfer of that subject.

A formal application process must be entered into by the student in order to gain such a credit (an application fee is payable). The Programme Manager can give an opinion on the likelihood of success but all applications are subject to the approval of the Board of Studies.

It is important for candidates to supply copies of results transcripts, and desirably an updated CV, to enable the Programme Manager to give advice on eligibility and possible cross credits/credit transfers.

## 7. TRANSITION ARRANGEMENTS

Students enrolled in the Programme prior to 2011 can choose to stay with the structure in force at the time. They have until 2015 to complete the Programme under that structure.

However, such students may choose to transition to the new structure. The following table sets out the conditions under which successfully completed unit standards are eligible for transition to the new structure.

**Transitioning from National Diploma in Engineering (Level 6) with strands in Mechanical Engineering, Production Engineering, and Mechanical Services, and with an optional strand in Practical Endorsement**

		Transitioning from Nat Dip Eng
Code	Course title	Successfully completed Unit Standard/s:
DEM3.301	Engineering Practice	14866
DEM4.102	Engineering Mathematics 1	21776
DEM4.301	Engineering CAD	21772
DEM4.302	Mechanics	21773 and 21774
DEM4.303	Material Properties	21785
DEM5.301	Thermodynamics & Heat Transfer	21781
DEM5.302	Strengths of Materials 1	21783 and 21784
DEM5.303	Manufacturing Processes	21788
DEM5.304	Electrical Fundamentals	21787
DEM6.101	Engineering Management	22918
DEM6.301	Fluid Mechanics	11385
DEM6.302	Mechanics of Machines	21277
DEM6.308	Strength of Materials 2	21783 and 21784
DEM6.309	Advanced Thermodynamics	21782

DEM6.315	Fluid Power	22920
DEM6.419	Maintenance Engineering Management	21789

Students wishing to transition to the new structure are required to make a formal application under the Recognition of Prior Learning application process. Students enrolled in the NZDE (Mechanical) programme with NZIHT prior to 2011 are able to cross credit successfully completed courses at no cost.

A small charge applies to students who have completed courses with other members of the Consortium of Polytechnics and wish to transfer their record of learning to NZIHT.

***The final date for transition from these existing qualifications is 31 December 2015***

## 8. HOW TO APPLY

Complete the attached Entry Assessment Form and send it to the address given below. Attach any additional information or documents (e.g. CV) that may assist the Programme Manager in determining your eligibility, possible exemptions and which courses you should enrol for.

Once your eligibility and subject choices have been confirmed, you will be sent an enrolment form.

Enrolment: Semester 1 courses: Enrolment forms are received from November until late January.  
Please enroll as early as possible.

Semester 2 courses: June through middle July.

## 9. CONTACT DETAILS FOR INQUIRIES

The Programme Administrator  
NZIHT  
PO Box 27050  
Garnett Avenue  
Hamilton 3257

Tel : (07) 850 8330  
Fax : (07) 850 8329  
e-mail : [civil@nziht.co.nz](mailto:civil@nziht.co.nz)

## ENTRY ASSESSMENT FORM

On the basis of the information you supply, we will assess your application to join the NZ Dip Eng (Mechanical) Programme. An Enrolment pack, including recommendations on which courses to enroll for, is supplied after this assessment is completed. **Please supply with this form a copy of all result transcripts/ CV.**

Mail to:

**Programme Manager  
NZ Institute of Highway Technology  
PO Box 27050  
Garnett Avenue  
Hamilton 3257**

### Personal Details

Name:						
Address:						
Phone:		(Home)		(Work)		(Mobile)
Email:		(Home)		(Work)		
Date of Birth:		Citizenship (Please tick appropriate box)		New Zealand Citizen <input type="checkbox"/> Permanent Resident <input type="checkbox"/> Other (Please Specify) <input type="checkbox"/> .....		

### Academic History

*Provide all the information that will help us to determine your eligibility to enroll in the programme and for possible cross credits or exemptions from components of the programme. An updated CV is very useful.*

#### (a) Secondary Level

Please tick the levels you have achieved and attach a copy of the results transcripts.

		School Subjects/Courses completed for which results transcripts have not yet been received.	
		Level	Course
	NCEA Level 1 (5 <sup>th</sup> Form Certificate)		
	NCEA Level 2 (6 <sup>th</sup> Form Certificate)		
	NCEA Level 3 (Bursary)		
If you have completed any of the above, but have not received the results yet, list the courses you have studied in the column on the right.			

#### (b) Tertiary Level

Please provide information of any tertiary studies completed to date:

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If you already know which courses you wish to enroll for in 2012, indicate them on the **Course Selection Form** overleaf otherwise leave the form blank.



Venue abbreviations: HMN = Hamilton  
 PMN = Palmerston North

CHC = Christchurch  
 AKL = Auckland

Starting in 2012, NZIHT will begin with the gradual phasing in of the “Mechanical Specialisation” of this programme.

The four courses that are common with NZDE (Civil) are immediately available in all the venues where Civil is offered.

Course Code	Course Name	Level	Credits	Pre-requisites or Co-Requisites	2012							
					Semester 1				Semester 2			
					HMN	CHC	AKL	PMN	HMN	CHC	AKL	PMN
DEM4.101	Eng. Fundamentals	4	15									
DEM4.102	Eng. Mathematics 1	4	15									
DEM4.103	Technical Literacy	4	15									
DEM6.101	Eng. Management	6	15									

The remaining “mechanical” courses will be phased in at a rate dictated by demand.

All courses scheduled will be offered subject to sufficient demand