# Programme Regulations for:

# Graduate Diploma in Engineering Technology

**with Strands in:** **Mechanical; Mechatronics; Power; Water and Water Waste; Highway Engineering**

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|---|---|---|---|
| **Wintec code:** | EN1801 | **MoE:** | WK3760 |
| **Level:** | 7 | **Credits:** | 120 |
| **Owner:** | Centre for Engineering and Industrial Design | **Effective Date:** | January 2021 |

These regulations should be read in conjunction with the Institute's Academic Regulations.

**1. Admission and Entry**

1.1 **General Academic Admission**

Candidates are required to have:

a) Successfully completed a bachelor degree in an engineering discipline (excluding a specialisation in the strand the candidate wishes to complete in this programme), with a pass mark of 65% or more, from a New Zealand institution, **or**

b) Successfully completed a bachelor degree in an engineering discipline from an approved and accredited overseas institution, with a pass mark of 65% or more or a Cumulative GPA of 6.5 or more; and completed their degree within 5 years; **or**

c) Successfully completed the New Zealand Diploma in Engineering (Level 6) (excluding a specialisation in the strand the candidate wishes to complete in this programme) **and** have further practical, professional or educational experience of an appropriate kind; **or**

d) Evidence of equivalent practical, professional or educational experience, as approved by the Centre Director or designated nominee.

1.1 **Special Admission**

Domestic applicants aged 20 years or above who have not met the General Admission or entry requirements for a programme but whose skills, education or work experience indicate that they have a reasonable chance of success[1] may be eligible for Special Admission. Special admission will be granted at the discretion of the Centre Director or designated nominee. Such applicants may be required to successfully complete a foundation, bridging or tertiary introductory programme as a condition of entry into higher level programmes.

1.2 **English Language Requirements**

Candidates who have English as a second language are required to have an overall International English Language Test System (IELTS) score of 6.0 or better in the academic band, with a minimum of 6.0 in the written and speaking bands, and a minimum of 5.5 in the reading and listening bands; **or** equivalent.

**2. Transfer of Credit**

2.1 Transfer of credit at graduate level is case by case but will not exceed more than 50% of the programme;

2.2 Recognition of Prior Learning (RPL) and/or Transfer of Credit will be available for all modules within this programme **except for** module *MG7101 Engineering Development Project*.

**3. Programme Requirements**

[1] Education Act 1989 Section 224 (3)

3.1 Every candidate for the Graduate Diploma in Engineering Technology (L7), with strands, shall to the satisfaction of the Academic Board follow a programme of full-time study for a period of normally not less than one year.

3.2 To pass a module, all candidates must achieve a minimum grade of 40% for assessments that have a weighting of 40% or more towards the final mark of a module; and an overall mark of 50% must be achieved for the module. All assessments must be attempted.

3.3 Each candidate's programme of study shall comprise compulsory and elective modules as listed in Section 6 of these regulations, totalling 120 credits (with a minimum of 75 credits at Level 7), as follows:

a) Candidates completing the Graduate Diploma in Engineering Technology (Level 7) Mechanical Strand, must complete all modules in Groups A and B, plus an elective module at Level 7 from Group G;

b) Candidates completing the Graduate Diploma in Engineering Technology (Level 7) Mechatronics Strand, must complete all modules in Groups A and C, plus an elective module at Level 7 from Group G;

c) Candidates completing the Graduate Diploma in Engineering Technology (Level 7) Power Strand, must complete all modules in Groups A and D, plus an elective module at Level 7 from Group G;

d) Candidates completing the Graduate Diploma in Engineering Technology (Level 7) Water and Water Waste Strand, must complete all modules in Groups A and E, plus an elective module at Level 7 from Group G;

e) Candidates completing the Graduate Diploma in Engineering Technology (Level 7) Highway Engineering Strand, must complete all modules in Groups A and F, plus an elective module at Level 7 from Group G.

## 4. Completion of the Programme

A candidate may take up to three years to complete this programme, unless an extension is granted by special permission of the Centre Director or designated nominee.

## 5. Award of the Qualification

Candidates who successfully complete all applicable Strand requirements in Section 3 of these regulations will be awarded the Graduate Diploma in Engineering Technology (Level 7) in the relevant Strand.

## 6. Schedule of Modules

6.1 The absence of an entry in the Pre-Requisite and Co-Requisite columns means that there are no pre/co-requisites for that module.

6.2 Pre-Requisites and Co-Requisites may be waived at the discretion of the Centre Director or designated nominee.

**Group A: Common compulsory module all strands**

| Module Code | Module Name | Level | Credits | Pre-Requisites | Co-Requisites |
|---|---|---|---|---|---|
| MG7101 | Engineering Development Project | 7 | 30 | Minimum of 30 credits at level 6 in chosen major; and Civil: MG6106; and Electrical/Mechanical: MG6136 | |

**Group B: Compulsory modules Mechanical Strand**

| Module Code | Module Name | Level | Credits | Pre-Requisites | Co-Requisites |
|---|---|---|---|---|---|
| MG6032 | Fluid Mechanics | 6 | 15 | MG5002<br>MG5004 | |

| Module Code | Module Name | Level | Credits | Pre-Requisites | Co-Requisites |
|---|---|---|---|---|---|
| MG6037 | Advanced Thermodynamics | 6 | 15 | MG5030 | |
| MG6039 | Applied Computational Modelling | 6 | 15 | MG6032 MG6038 | |
| MG7022 | Energy Engineering | 7 | 15 | MG6037 | |
| MG7024 | Fluids Power & Advanced Fluid Mechanics | 7 | 15 | MG6032 | |

**Group C: Compulsory modules Mechatronics Strand**

| Module Code | Module Name | Level | Credits | Pre-Requisites | Co-Requisites |
|---|---|---|---|---|---|
| MG5018 | PLC Programming 1 | 5 | 15 | MG5001 & MG5014 or MG5033 or MG5034 | |
| MG6031 | Instrumentation & Control 2 | 6 | 15 | MG5004 MG5026 | |
| MG6033 | Mechanics of Machines | 6 | 15 | MG5002 MG5004 | |
| MG7017 | Robotics | 7 | 15 | MG6019 MG6033 | |
| MG7018 | Systems & Control | 7 | 15 | MG6031 | |

**Group D: Compulsory modules Power Strand**

| Module Code | Module Name | Level | Credits | Pre-Requisites | Co-Requisites |
|---|---|---|---|---|---|
| MG5016 | Elements of Power Engineering | 5 | 15 | MG5015 or MG5034 | |
| MG5017 | Electrical Machines | 5 | 15 | MG5015 or MG5034 | |
| MG6117 | Power Distribution | 6 | 15 | MG5016 | |
| MG7011 | Electrical Machine Dynamics | 7 | 15 | MG5017 | |
| MG7110 | Power Systems | 7 | 15 | MG5016 | |

**Group E: Compulsory modules Water and Water Waste Strand**

| Module Code | Module Name | Level | Credits | Pre-Requisites | Co-Requisites |
|---|---|---|---|---|---|
| MG6109 | Water & Waste Engineering | 6 | 15 | | MG5008 |
| MG6110 | Water & Waste Treatment | 6 | 15 | | |
| MG6011 | Hydrology and Erosion Management | 6 | 15 | | |
| MG7005 | Urban Drainage Systems | 7 | 15 | MG6109 | |
| MG7047 | Special Topic | 7 | 15 | | |

**Group F: Compulsory modules Highway Engineering Strand**

| Module Code | Module Name | Level | Credits | Pre-Requisites | Co-Requisites |
|---|---|---|---|---|---|
| MG6014 | Highway Design & Maintenance | 6 | 15 | MG5012 | |
| MG6015 | Traffic Engineering | 6 | 15 | MG5012 | MG5004 |
| MG6011 | Hydrology and Erosion Management | 6 | 15 | | |

| | | | | | |
|---|---|---|---|---|---|
| MG7007 | Urban Transport Planning | 7 | 15 | MG5012 | |
| MG7047 | Special Topic | 7 | 15 | | |

**Group G: Common elective modules all Strands**

| Module Code | Module Name | Level | Credits | Pre-Requisites | Co-Requisites |
|---|---|---|---|---|---|
| MG6048 | Special Topic | 6 | 15 | | |
| MG6190 | Mathematics 2 | 6 | 15 | MG5004 | |
| MG7025 | Project Management | 7 | 15 | MG6103 | |
| MG7026 | Risk Management | 7 | 15 | MG6103 | |
| MG7047 | Special Topic | 7 | 15 | | |