

## ***Bachelor of Engineering Technology [BETMG]***

To be read in conjunction with Unitec's Academic Statute and associated Policies and Procedures.

These programme regulations apply to the Bachelor of Engineering Technology [BETMG] programme, which leads to the award of Bachelor of Engineering Technology (Level 7) qualification, with strands in Civil Engineering and Electrical Engineering, (360 Credits) [CA2381-2].

These regulations come into effect from Semester 1, 2021.

### **1. Ngā Ture Hei Whakaurunga | Admission Requirements**

*Admission Requirements comply with Unitec's Admission Requirements Guidelines.*

To be eligible for admission to this programme, all applicants must meet three admission requirements:

- a. Requirements for either general admission, special admission, or discretionary admission
- b. Any additional Programme specific requirements
- c. English language requirements

#### **1.1 Whakaurunga Whānui | General Admission**

To be admitted to this programme all applicants must be at least 16 years of age on the date of the programme's commencement for the semester in which they wish to enrol (or provide a completed Early Release Exemption form), and meet the following requirements:

- a. University entrance

A minimum on 60 NCEA credits at Level 3 including:

- A minimum of 14 credits at Level 3 in Physics; and
- A minimum of 14 credits at Level 3 in Mathematics (including Algebra and calculus); and
- A minimum of 14 credits at Level 3 in one other subject from the list of approved NZQA UE subject list; and
- A minimum of 18 credits at Level 3 or higher taken from no more than two additional subjects from the approved subjects listing at NZQA;

*or*

- b. Equivalent academic qualifications which may include:

- University Bursary with 45% or more in both Physics and Calculus or Algebra; or
- Equivalent Cambridge score; or
- Equivalent International Baccalaureate.

#### **1.2 Whakaurunga Motuhake | Special Admission**

Applicants must have:

- a. attained the age of 20 years on or before the first day of the semester in which study for the programme is to commence; and
- b. provided sufficient evidence of aptitude or appropriate work or other life experience that would indicate a successful outcome in the qualification.

#### **1.3 Whakaurunga Kōwhiringa | Discretionary Admission**

In exceptional cases an applicant who does not meet the general admission requirements and who has not reached the age of 20 on or before the first day of the semester in which study for the Certificate is to commence may apply for discretionary admission.

In assessing whether to grant discretionary admission in exceptional cases, the primary focus will be on the applicant's level of preparedness for study at the required level.

#### **1.4 Whakaurunga Tautui | Programme Specific Requirements**

There are no programme specific requirements.

	<p><b>1.5 Whakaurunga Reo Pākehā   English Language Admission Requirements</b>  All applicants must provide evidence that they have the necessary English language proficiency required for the Programme as demonstrated by the equivalence of a minimum of 10 NCEA English credits at Level 2 or above made up with a minimum of 5 credits in reading and a minimum of 5 credits in writing.</p> <p>International applicants and any Domestic applicant for whom English, Māori or NZ Sign is not their first language must also provide evidence that they have the necessary English language proficiency required for the Programme as demonstrated by an equivalent of overall band score (Academic) of 6.0 IELTS, (writing and speaking score no less than 6.0 and reading and listening bands no less than 5.5) or equivalent.</p>																																																												
<p><b>2. Paearu Kōwhiri Tukanga   Selection Criteria &amp; Process</b></p> <p><i>Selection Criteria and Processes comply with Unitec's Admission Requirements Guidelines.</i></p>	<p><b>2.1 Paearu Kōwhiri   Selection Criteria</b>  When the number of eligible applicants for admission exceeds the number of places available, the following selection criteria will be applied:</p> <ul style="list-style-type: none"> <li>• Academic achievement in related subject areas such as statistics, technology, graphics</li> <li>• Previous academic achievements</li> <li>• Communication skills</li> <li>• Motivation to complete the programme</li> <li>• Life or work experience in, or appropriate to, the programme</li> <li>• Ability to participate in field work aspects of the programme where relevant</li> </ul> <p>Applicants who meet the maximum number of listed criteria will be the preferred candidates</p> <p><b>2.2 Tukanga Kōwhiri   Selection Process</b>  Selection will be made by Unitec staff members with the delegated authority to offer places to applicants. These staff members will select students on the basis of written information supplied on the enrolment form. At the discretion of the staff members, an interview (face-to-face or electronic) may be required. A list of delegated staff members is maintained by the Programme Academic Quality Committee (PAQC) responsible for the programme.</p>																																																												
<p><b>3. Ngā Ture Hei Whakawhiwhi Tohu Mātauranga   Requirements for the Award of the Programme</b></p> <p><i>Requirements comply with Unitec's Programme Completion and Awards Policy and associated procedure.</i></p>	<p><b>3.1 Whakaemi Tūtukitanga   Credit Accumulation</b>  To be awarded the Bachelor of Engineering Technology, a student must successfully complete a minimum of 360 credits in the pattern set out in Table 1a or 1b according to their Major. Courses are completed from the Major Specific compulsory and elective courses set out in Table 2a (i, ii &amp; iii) &amp; 2b (i, ii, iii) and additional Common Elective courses set out in Table 2c.</p> <p><b>Table 1a: Credit Requirements for Bachelor of Engineering Technology (Civil Engineering)</b></p> <table border="1" data-bbox="352 1339 1426 1626"> <thead> <tr> <th>Level</th> <th>Compulsory Credits</th> <th>Major Specific Elective Credits</th> <th>Major Specific OR Common Elective Credits</th> <th>Total Credits</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>165</td> <td></td> <td></td> <td>165</td> </tr> <tr> <td>6</td> <td>45</td> <td></td> <td></td> <td>45</td> </tr> <tr> <td>7</td> <td>45</td> <td>15</td> <td>15</td> <td>75</td> </tr> <tr> <td>5, 6, or 7</td> <td></td> <td>45</td> <td>30</td> <td>75</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td><b>360</b></td> </tr> </tbody> </table> <p><b>Table 1b: Credit Requirements for Bachelor of Engineering Technology (Electrical Engineering)</b></p> <table border="1" data-bbox="352 1688 1426 1975"> <thead> <tr> <th>Level</th> <th>Compulsory Credits</th> <th>Major Specific Elective Credits</th> <th>Major Specific OR Common Elective Credits</th> <th>Total Credits</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>105</td> <td></td> <td></td> <td>105</td> </tr> <tr> <td>6</td> <td>30</td> <td></td> <td></td> <td>30</td> </tr> <tr> <td>7</td> <td>45</td> <td>15</td> <td>15</td> <td>75</td> </tr> <tr> <td>5, 6, or 7</td> <td></td> <td>135</td> <td>15</td> <td>150</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td><b>360</b></td> </tr> </tbody> </table> <p><b>3.1.1 Recommended Optional Pathways</b></p>	Level	Compulsory Credits	Major Specific Elective Credits	Major Specific OR Common Elective Credits	Total Credits	5	165			165	6	45			45	7	45	15	15	75	5, 6, or 7		45	30	75					<b>360</b>	Level	Compulsory Credits	Major Specific Elective Credits	Major Specific OR Common Elective Credits	Total Credits	5	105			105	6	30			30	7	45	15	15	75	5, 6, or 7		135	15	150					<b>360</b>
Level	Compulsory Credits	Major Specific Elective Credits	Major Specific OR Common Elective Credits	Total Credits																																																									
5	165			165																																																									
6	45			45																																																									
7	45	15	15	75																																																									
5, 6, or 7		45	30	75																																																									
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7	45	15	15	75																																																									
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Recommended optional pathways have been designed for each Major to improve flexibility, meet the variable requirements of different industries and institutions, and achieve breadth in the degree. Courses for optional pathways in Civil Engineering are listed in Table 2a.1 and for Electrical Engineering in Table 2b.1.

### 3.1.2 Electives

Electives within each major are to be selected from courses specified within that major or from courses from the common elective list (Table 2c). Electives selected must meet academic requirements for course prerequisites and completion of the programme.

A maximum of 30 credits (two electives) at level 5, level 6 or level 7, from outside the programme may be credited towards the degree following approval from the Programme Committee/Head of School. These may replace both major specific and common electives. Any course must have a coherent relationship to that major. Such decisions must align with each Metro ITP's QMS and the NZQA Rules for Bachelor's degrees.

### 3.1.1 Progression through the Programme

Learner progression must comply with the pre- and co-requisites for each course – as identified on each of the course descriptors, however these may be waived with approval from the Institution's Programme Manager / Head of Department (or their delegate). Recommended optional pathways also present an indicative pattern in which they should be taken to ensure coherence. The order of courses is indicative only. However, MG7101 and MG7121 should occur as close to the end of the programme of study as practical.

Courses are completed as described in Table 1a and 1b above from the Major Specific compulsory and elective courses set additional Common Elective courses set out in the tables below.

**Table 2a.i: Course Details – BETMG Civil Engineering Major Specific Compulsory Courses**

Compulsory courses are shown in **bold**

Course No	Course Name	Credits	Pre- requisites	Co- requisites	Restrictions
Level 5					
<b>ENGGMG5001</b>	<b>Engineering Computing</b>	<b>15</b>			
<b>ENGGMG5002</b>	<b>Engineering Mechanics</b>	<b>15</b>			
<b>ENGGMG5003</b>	<b>Engineering Communication</b>	<b>15</b>			
<b>ENGGMG5004</b>	<b>Engineering Mathematics 1</b>	<b>15</b>			
<b>ENGGMG5005</b>	<b>Engineering Design and Drawing</b>	<b>15</b>			
<b>ENGGMG5006</b>	<b>Land Surveying</b>	<b>15</b>			
<b>ENGGMG5008</b>	<b>Fluid Mechanics (Civil)</b>	<b>15</b>	<b>ENGGMG5002 &amp; ENGGMG5004</b>		
<b>ENGGMG5009</b>	<b>Engineering Site Investigation</b>	<b>15</b>			
<b>ENGGMG5012</b>	<b>Highway Engineering</b>	<b>15</b>	<b>ENGGMG5004 &amp; ENGGMG5009</b>		
<b>ENGGMG5032</b>	<b>Basic Structures</b>	<b>15</b>	<b>ENGGMG5002</b>		<b>ENGGMG5007</b>
<b>ENGGMG5107</b>	<b>Civil Materials</b>	<b>15</b>			<b>ENGGMG5007</b>
Level 6					
<b>ENGGMG6103</b>	<b>Engineering Management</b>	<b>15</b>	<b>ENGGMG5003</b>		<b>ENGGMG6003</b>
<b>ENGGMG6005</b>	<b>Civil Engineering Detailing and Modelling</b>	<b>15</b>	<b>ENGGMG5005</b>		
<b>ENGGMG6106</b>	<b>Civil Engineering Construction Practices</b>	<b>15</b>			<b>ENGGMG6006</b>
Level 7					
<b>ENGG7101MG</b>	<b>Engineering Development</b>	<b>30</b>	<b>For Civil: 30 credits at Level 6 &amp;</b>		<b>ENGGMG7001</b>

	<b>Project</b>		<b>ENGGMG6106</b>		
			<b>For Electrical: 30 credits at Level 6 &amp; ENGGMG6136</b>		
<b>ENGGMG7121</b>	<b>Professional Engineering Practice</b>	<b>15</b>	<b>ENGGMG6103</b>		<b>ENGGMG7021</b>

**Table 2a.ii: Course Details – BETMG Civil Engineering Major Specific Elective Courses**

Elective courses are shown in *italics*.

Course No	Course Name	Credits	Pre- requisites	Co-requisites	Restrictions
<b>Level 5</b>					
<i>ENGGMG5113</i>	<i>Fundamentals of Environmental Engineering</i>	<i>15</i>			<i>ENGGMG5013</i>
<b>Level 6</b>					
<i>ENGGMG6007</i>	<i>Structural Steel and Timber</i>	<i>15</i>	<i>ENGGMG6046</i>		
<i>ENGGMG6008</i>	<i>Structural Concrete</i>	<i>15</i>	<i>ENGGMG6046</i>		
<i>ENGGMG6011</i>	<i>Hydrology and Erosion Management</i>	<i>15</i>			
<i>ENGGMG6012</i>	<i>Geotechnical Engineering A</i>	<i>15</i>	<i>ENGGMG5009</i>		<i>ENGGMG5011</i>
<i>ENGGMG6013</i>	<i>Engineering Geology</i>	<i>15</i>	<i>ENGGMG5107</i>	<i>ENGGMG5009</i>	
<i>ENGGMG6014</i>	<i>Highway Design and Maintenance</i>	<i>15</i>	<i>ENGGMG5012</i>		
<i>ENGGMG6015</i>	<i>Traffic Engineering</i>	<i>15</i>	<i>ENGGMG5012</i>		
<i>ENGGMG6045</i>	<i>Geotechnical Engineering B</i>	<i>15</i>	<i>ENGGMG6012</i>		<i>ENGGMG7006</i>
<i>ENGGMG6046</i>	<i>Structural Principles</i>	<i>15</i>	<i>ENGGMG5032</i>		<i>ENGGMG5010</i>
<i>ENGGMG6109</i>	<i>Water and Waste Engineering</i>	<i>15</i>		<i>ENGGMG5008</i>	<i>ENGGMG6009</i>
<i>ENGGMG6110</i>	<i>Water and Waste Treatment</i>	<i>15</i>		<i>ENGGMG5008</i>	<i>ENGGMG6010</i>
<i>ENGGMG6116</i>	<i>Sustainable Engineering</i>	<i>15</i>			<i>ENGGMG6016</i>
<b>Level 7</b>					
<i>ENGGMG7004</i>	<i>Design of Structures</i>	<i>15</i>	<i>ENGGMG6007, ENGGMG6008</i>		
<i>ENGGMG7005</i>	<i>Urban Drainage Systems</i>	<i>15</i>	<i>ENGGMG6109</i>		
<i>ENGGMG7007</i>	<i>Urban Transport Planning</i>	<i>15</i>	<i>ENGGMG5012</i>		
<i>ENGGMG7008</i>	<i>Sustainable Resource Utilisation</i>	<i>15</i>			
<i>ENGGMG7045</i>	<i>Geotechnical Engineering C</i>	<i>15</i>	<i>ENGGMG6045</i>		
<i>ENGGMG7109</i>	<i>Resource and Environmental Management</i>	<i>15</i>			<i>ENGGMG7009</i>

**Table 2a.iii: Civil Engineering Recommended Pathways**

Recommended optional pathways have been designed for each major to improve flexibility, meet the variable requirements of different industries and institutions, and achieve breadth in the degree. The following Civil Major pathways are from courses listed in Table 2a (i & ii).

Year	Course Name	Credits	Level	
<b>Structural Pathway</b>				
2	ENGGMG6046	Structural Principles	15	6
3	ENGGMG6007	Structural Steel and Timber	15	6
3	ENGGMG6008	Structural Concrete	15	6
3	ENGGMG7004	Design of Structures	15	7
<b>Water and Water Waste Pathway</b>				
2	ENGGMG6109	Water and Waste Engineering	15	6
3	ENGGMG6110	Water and Waste Treatment	15	6

3	ENGGMG6011	Hydrology and Erosion Management	15	6
3	ENGGMG7005	Urban Drainage Systems	15	7
<b>Geotechnical Pathway</b>				
2	ENGGMG6012	Geotechnical Engineering A	15	6
3	ENGGMG6045	Geotechnical Engineering B	15	6
3	ENGGMG6013	Engineering Geology	15	6
3	ENGGMG7045	Geotechnical Engineering C	15	7
<b>Roading/Transportation Pathway</b>				
2	ENGGMG6012	Geotechnical Engineering A	15	6
2	ENGGMG6014	Highway Design and Maintenance	15	6
3	ENGGMG6015	Traffic Engineering	15	6
3	ENGGMG7007	Urban Transport Planning	15	7
<b>Environmental Pathway</b>				
2	ENGGMG5113	Fundamentals of Environmental Engineering	15	5
3	ENGGMG6116	Sustainable Engineering	15	6
3	ENGGMG7008	Sustainable Resource Utilisation	15	7
3	ENGGMG7109	Resource and Environmental Management	15	7

**Table 2b.i: Course Details – BETMG Electrical Engineering Major Specific Compulsory Courses**

Compulsory courses are shown in **bold**

Course No	Course Name	Credits	Pre- requisites	Co- requisites	Restrictions
<b>Level 5</b>					
<b>ENGGMG5001</b>	<b>Engineering Computing</b>	<b>15</b>			
<b>ENGGMG5002</b>	<b>Engineering Mechanics</b>	<b>15</b>			
<b>ENGGMG5003</b>	<b>Engineering Communication</b>	<b>15</b>			
<b>ENGGMG5004</b>	<b>Engineering Mathematics 1</b>	<b>15</b>			
<b>ENGGMG5005</b>	<b>Engineering Design and Drawing</b>	<b>15</b>			
<b>And two compulsory courses from the following combinations:</b>					
<b>ENGGMG5034</b>	<b>Electrical Principles</b>	<b>15</b>			<b>ENGGMG5014</b>
<i>And</i>					
<b>ENGGMG5035</b>	<b>Electronic Principles</b>	<b>15</b>			<b>ENGGMG5015</b>
<b>Or</b>					
<b>ENGGMG5014</b>	<b>Electrical and Electronic Principles 1</b>	<b>15</b>			
<i>And</i>					
<b>ENGGMG5015</b>	<b>Electrical and Electronic Principles 2</b>	<b>15</b>			
<b>Level 6</b>					
<b>ENGGMG6103</b>	<b>Engineering Management</b>	<b>15</b>	<b>ENGGMG5003</b>		<b>ENGGMG6003</b>
<b>ENGGMG6136</b>	<b>Engineering Project</b>	<b>15</b>	<b>ENGGMG5003, ENGGMG5005</b> <b>A minimum of 45 Level 5 credits from major specific courses</b>		<b>ENGGMG6036</b>
<b>Level 7</b>					

ENGG7101MG	Engineering Development Project	30	For Civil: 30 credits at Level 6 & ENGGMG6103 For Electrical: 30 credits at Level 6 & ENGGMG6136		ENGGMG7001
ENGGMG7121	Professional Engineering Practice	15	ENGGMG6103		ENGGMG7021

**Table 2b.ii: Course Details – BETMG Electrical Engineering Major Specific Elective Courses**

Elective courses are shown in *italics*.

Course No	Course Name	Credits	Pre-requisites	Co-requisites	Restrictions
Level 5					
ENGGMG5016	<i>Elements of Power Engineering</i>	15	ENGGMG5015 or ENGGMG5034		
ENGGMG5017	<i>Electrical Machines</i>	15	ENGGMG5015 or ENGGMG5034		
ENGGMG5018	<i>PLC Programming 1</i>	15	ENGGMG5001, (ENGGMG5014 or ENGGMG5034)		
ENGGMG5019	<i>Electronics 1</i>	15	ENGGMG5015 or ENGGMG5035		
ENGGMG5020	<i>Microcontroller Systems 1</i>	15	ENGGMG5001		
ENGGMG5021	<i>Electronics Manufacturing 1</i>	15	ENGGMG5015 or ENGGMG5035		
ENGGMG5022	<i>Computer Programming 1</i>	15	ENGGMG5001		
ENGGMG5023	<i>PC Engineering</i>	15			
ENGGMG5026	<i>Instrumentation and Control 1</i>	15	ENGGMG5014 or ENGGMG5034		
ENGGMG5124	<i>Introduction to Networks</i>	15			
ENGGMG5125	<i>Routing and Switching Essentials</i>	15	ENGGMG5124		
Level 6					
ENGGMG6019	<i>PLC Programming 2</i>	15	ENGGMG5018		
ENGGMG6020	<i>Automation</i>	15	ENGGMG6019		
ENGGMG6021	<i>Electronics 2</i>	15	ENGGMG5019		
ENGGMG6022	<i>Microcontroller Systems 2</i>	15	ENGGMG5020		
ENGGMG6023	<i>Electronics Manufacturing 2</i>	15	ENGGMG5021		
ENGGMG6024	<i>Electronic Design</i>	15	(ENGGMG5015 or ENGGMG5035), ENGGMG5020		
ENGGMG6025	<i>Computer Programming 2</i>	15	ENGGMG5022		
ENGGMG6026	<i>Network Operating Systems</i>	15	ENGGMG5023		
ENGGMG6031	<i>Instrumentation and Control 2</i>	15	ENGGMG5004, ENGGMG5026		
ENGGMG6032	<i>Fluid Mechanics (Mech)</i>	15	ENGGMG5002, ENGGMG5004		

ENGGMG6033	<i>Mechanics of Machines</i>	15	ENGGMG5002, ENGGMG5004		
ENGGMG6047	<i>Protection</i>	15	ENGGMG5004, ENGGMG5016		
ENGGMG6049	<i>Telecommunications Intermediate</i>	15	(ENGGMG5015 or ENGGMG5035), ENGGMG5124		ENGGMG5127 & ENGGMG5027
ENGGMG6117	<i>Power Distribution</i>	15	ENGGMG5016		ENGGMG6017
ENGGMG6118	<i>Sustainable Energy and Power Electronics</i>	15	ENGGMG5004, (ENGGMG5014 or ENGGMG5034), (ENGGMG5015 or ENGGMG5035)		ENGGMG6018
ENGGMG6127	<i>Scaling Networks</i>	15	ENGGMG5125		ENGGMG6027
ENGGMG6128	<i>Connecting Networks</i>	15	ENGGMG6127		ENGGMG6028
ENGGMG6129	<i>Network Security</i>	15	ENGGMG5125, ENGGMG6128		ENGGMG6029
ENGGMG6130	<i>Advanced Network Routing</i>	15	ENGGMG6128		ENGGMG6030
<b>Level 7</b>					
ENGGMG7011	<i>Electrical Machine Dynamics</i>	15	ENGGMG5017		
ENGGMG7012	<i>Signal Processing</i>	15	ENGGMG5004, ENGGMG5019		
ENGGMG7013	<i>Embedded Systems</i>	15	ENGGMG6022		
ENGGMG7014	<i>Programming for Engineers 3</i>	15	ENGGMG6025		
ENGGMG7017	<i>Robotics</i>	15	ENGGMG6019, ENGGMG6033		
ENGGMG7018	<i>Systems and Control</i>	15	ENGGMG6031		
ENGGMG7110	<i>Power Systems</i>	15	ENGGMG5016		ENGGMG7010
ENGGMG7115	<i>Advanced Network Switching</i>	15	ENGGMG6128		ENGGMG7015
ENGGMG7116	<i>Advanced Network Troubleshooting</i>	15	ENGGMG6130, ENGGMG7115		ENGGMG7016
ENGGMG7135	<i>Telecommunications Advanced</i>	15	ENGGMG6049		ENGGMG6135

**Table 2b.iii: Electrical Engineering Recommended Pathways**

Recommended optional pathways have been designed for each major to improve flexibility, meet the variable requirements of different industries and institutions, and achieve breadth in the degree. The following Electrical Major pathways are from courses listed in Table 2b (i & ii).

Year	Course Name	Credits	Level
<b>Power Pathway</b>			
2	ENGGMG5016 Elements of Power Engineering	15	5
2	ENGGMG5017 Electrical Machines	15	5
2	ENGGMG5018 PLC Programming 1	15	5
2	ENGGMG6117 Power Distribution	15	6
2	ENGGMG6118 Sustainable Energy and Power Electronics	15	6
2	ENGGMG6019 PLC Programming 2	15	6
3	ENGGMG6047 Protection	15	6
3	ENGGMG7110 Power Systems	15	7
3	ENGGMG7011 Electrical Machine Dynamics	15	7
<b>Electronic Pathway</b>			

2	ENGGMG5019	Electronics 1	15	5
2	ENGGMG5020	Microcontroller Systems 1	15	5
2	ENGGMG5021	Electronics Manufacturing 1	15	5
2	ENGGMG6021	Electronics 2	15	6
2	ENGGMG6022	Microcontroller Systems 2	15	6
2	ENGGMG6023	Electronics Manufacturing 2	15	6
3	ENGGMG6024	Electronic Design	15	6
3	ENGGMG7012	Signal Processing	15	7
3	ENGGMG7013	Embedded Systems	15	7
<b>Computer Pathway</b>				
2	ENGGMG5022	Computer Programming 1	15	5
2	ENGGMG5020	Microcontroller Systems 1	15	5
2	ENGGMG5023	PC Engineering	15	5
2	ENGGMG6025	Computer Programming 2	15	6
2	ENGGMG6022	Microcontroller Systems 2	15	6
2	ENGGMG6026	Network Operating Systems	15	6
3	ENGGMG6024	Electronic Design	15	6
3	ENGGMG7014	Programming for Engineers 3	15	7
3	ENGGMG7013	Embedded Systems	15	7
<b>Network Pathway</b>				
2	ENGGMG5124	Introduction to Networks	15	5
2	ENGGMG5125	Routing and Switching Essentials	15	5
2	ENGGMG5023	PC Engineering	15	5
2	ENGGMG6026	Network Operating Systems	15	6
2	ENGGMG6127	Scaling Networks	15	6
2	ENGGMG6128	Connecting Networks	15	6
3	ENGGMG6129	Network Security	15	6
3	ENGGMG6130	Advanced Network Routing	15	6
3	ENGGMG7115	Advanced Network Switching	15	7
3	ENGGMG7116	Advanced Network Troubleshooting	15	7
<b>Mechatronics Pathway</b>				
2	ENGGMG5018	PLC Programming 1	15	5
2	ENGGMG5026	Instrumentation and Control 1	15	5
2	ENGGMG6019	PLC Programming 2	15	6
2	ENGGMG6031	Instrumentation and Control 2	15	6
2	ENGGMG6032	Fluid Mechanics (Mech)	15	6
2	ENGGMG6033	Mechanics of Machines	15	6
3	ENGGMG6020	Automation	15	6
3	ENGGMG7017	Robotics	15	7
3	ENGGMG7018	Systems and Control	15	7
<b>Telecommunications Pathway</b>				
2	ENGGMG5020	Microcontroller Systems 1	15	5
2	ENGGMG5124	Introduction to Networks	15	5
2	ENGGMG5125	Routing and Switching Essentials	15	5
2	ENGGMG6022	Microcontroller Systems 2	15	6
3	ENGGMG6127	Scaling Networks	15	6
2	ENGGMG6049	Telecommunications Intermediate	15	6
3	ENGGMG6128	Connecting Networks	15	6
2	ENGGMG7135	Telecommunications Advanced	15	7
3	ENGGMG7012	Signal Processing	15	7

**Table 2c: Common Elective Courses (All Majors)**

Course No	Course Name	Credits	Pre-requisites	Co-Requisites	Restrictions
<b>Level 5</b>					



ENGGMG5090	<i>Heritage, Culture and Sustainability in Engineering</i>	15			
<b>Level 6</b>					
ENGGMG6048	<i>Special Topic</i>	15			
ENGGMG6190	<i>Mathematics 2</i>	15	ENGGMG5004		
<b>Level 7</b>					
ENGGMG7025	<i>Project Management</i>	15	ENGGMG6103		ENGGMG6004
ENGGMG7026	<i>Risk Management</i>	15	ENGGMG6103		
ENGGMG7047	<i>Special Topic</i>	15			

**3.2 Mahi Waehanga Pāhekoheko | Integrated and Work-based components**  
 Practical/work-based components are integrated into the relevant courses throughout the three years with a strong emphasis on the industry project in the final year.

**3.3 Mahi Akoranga | A Wāhanga | Course Load per Semester**  
 The normal full-time course load is 60 credits per semester, or 75 credits with the approval of the relevant academic authority.

**3.4 Whakaurunga Takiwā | Enrolment Periods**  
 The normal enrolment period is three years (full-time study) or six years (part-time study). Students who are prevented by ill health, or other cause, from completing the programme requirements within the maximum period of enrolment, the relevant academic authority may approve suspension of enrolment for up to a maximum of six months (one semester). The maximum period to complete this Programme is ten years.

**3.5 Whakawhiwhi Tāpiripiri | Additional Awards**  
**3.5.1 Senior Scholar Award**  
 To be eligible for consideration to receive a Senior Scholar Award a student must have:

- achieved a cumulative Grade Point Average (GPA) of 8.0 (there is no rounding) or better across all degree courses for which s/he has been assessed in the programme; and
- achieved at least 2/3 of the total credits for the degree through enrolment in Unitec courses (i.e. have achieved no more than 1/3 of the credits by cross credits from another institution or by the assessment of prior learning).

**4. Tūtukitanga Whakamihi | Credit Recognition**

*Credit Recognition complies with Unitec's Assessment, Moderation and Grades Policy and associated procedure.*

**4.1 Whakawhiti Tūtukitanga | Cross Credit**  
 Credits will not be awarded for successful study that took place more than 5 years prior to the date of first enrolment in the programme.

- A student may be awarded credits or exemptions in recognition of successful equivalent study, at the same or a higher level in the context of another programme.
- The credit recognition may be:
  - specified, where there is direct equivalence of the learning outcomes of a completed course and a course in the programme; or
  - unspecified, where the previous study has taken place in a programme with a similar philosophy but there is no exact match in the programme's courses.

**4.2 Aromatawai Tōmua | Assessment of Prior Learning (APL)**  
 Assessment of Prior Learning is available for all courses in this programme. APL decisions will be made on a case-by-case basis under the Unitec Assessment of Prior Learning Procedure.

**4.3 Ngā whakawhitinga | Credit Transfer**  
 A graduate of the NZ Diploma in Engineering (NZDE) may be awarded 180 credits towards BEngTech in the appropriate major. Cross Credit processes will be applied according to 4.1 above.

**4.4 Tu Mātauranga | Advanced Standing**  
 Students may be eligible for Advanced Standing entry to the Bachelor of Engineering Technology programme. Advanced standing applications will be considered from experienced practitioners and/or graduates with other qualifications. Advanced standing will be assessed using criteria from the

	<p>graduate profiles and programme outcomes from the Bachelor of Engineering Technology in accordance with credit recognition regulations (4.1 &amp; 4.2).</p> <ul style="list-style-type: none"> <li>• Students may be admitted to the second year of the programme if they have provided evidence that they have the qualifications and/or experience equivalent to the learning outcomes and standards of the first year of the degree.</li> <li>• Students may be admitted to the third year if they have provided evidence that they have the qualifications and/or experience that is equivalent to the learning outcomes and standards of the first and second year of the degree, including suitable qualifications and/or experience in the particular field of their intended major.</li> </ul>																																																
<p><b>5. Waeture Aromatawai   Assessment Regulations</b></p> <p><i>Assessment Regulations comply with Unitec's Assessment, Moderation and Grades Policy and associated procedure.</i></p>	<p><b>5.1 Paparahi Aromatawai   Assessment Basis</b>  Assessment in this programme is achievement based using an 11-point grading scale. Students must obtain at least 50% overall score in any achievement-based course in order to pass that course.</p> <p>Students must achieve a minimum of 40% in both aggregated coursework marks and in any final examination, with an overall grade of C- (50%) or better to pass each course. Any deviation to this will be advised on the Course Descriptor.</p> <p><b>5.2 Ākoranga Taumata   Course grades</b>  Course grades will be determined by the mathematical aggregation of weighted assessment marks and reported according to the following scales.</p> <p><b>Table 3: Achievement based 11-point assessment system</b></p> <table border="1" data-bbox="363 880 1136 1357"> <thead> <tr> <th>Grade</th> <th>Meaning</th> <th>Result</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>A+</td> <td>Distinction</td> <td>Credits Earned</td> <td>90 – 100</td> </tr> <tr> <td>A</td> <td>Distinction</td> <td>Credits Earned</td> <td>85 – 89</td> </tr> <tr> <td>A-</td> <td>Distinction</td> <td>Credits Earned</td> <td>80 – 84</td> </tr> <tr> <td>B+</td> <td>Merit</td> <td>Credits Earned</td> <td>75 – 79</td> </tr> <tr> <td>B</td> <td>Merit</td> <td>Credits Earned</td> <td>70 – 74</td> </tr> <tr> <td>B-</td> <td>Merit</td> <td>Credits Earned</td> <td>65 – 69</td> </tr> <tr> <td>C+</td> <td>Pass</td> <td>Credits Earned</td> <td>60 – 64</td> </tr> <tr> <td>C</td> <td>Pass</td> <td>Credits Earned</td> <td>55 – 59</td> </tr> <tr> <td>C-</td> <td>Pass</td> <td>Credits Earned</td> <td>50 – 54</td> </tr> <tr> <td>D</td> <td>Fail</td> <td>No Credits Earned</td> <td>40 – 49</td> </tr> <tr> <td>E</td> <td>Fail</td> <td>No Credits Earned</td> <td>0 – 39</td> </tr> </tbody> </table>	Grade	Meaning	Result	Percentage	A+	Distinction	Credits Earned	90 – 100	A	Distinction	Credits Earned	85 – 89	A-	Distinction	Credits Earned	80 – 84	B+	Merit	Credits Earned	75 – 79	B	Merit	Credits Earned	70 – 74	B-	Merit	Credits Earned	65 – 69	C+	Pass	Credits Earned	60 – 64	C	Pass	Credits Earned	55 – 59	C-	Pass	Credits Earned	50 – 54	D	Fail	No Credits Earned	40 – 49	E	Fail	No Credits Earned	0 – 39
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	<p><b>5.3 Paearu Taumata   Grade Criteria</b>  Students may be awarded one of the following grades for a course:</p> <p><b>Table 4: Grade Criteria</b></p> <table border="1" data-bbox="355 1458 1385 2033"> <thead> <tr> <th>Grade</th> <th>Meaning</th> <th>Criteria</th> </tr> </thead> <tbody> <tr> <td>CR</td> <td>Credit Recognition<sup>1</sup></td> <td>The student has applied for and been awarded a credit recognition from another qualification</td> </tr> <tr> <td>CTG</td> <td>Continuing<sup>2</sup></td> <td>The Course runs for more than one semester and the final Summative Assessment has not yet occurred. No Credits earned</td> </tr> <tr> <td>DEF</td> <td>Deferred</td> <td>The student has approval to complete a Course Assessment beyond the schedule date. Unless an exception has been approved, any Deferred Grade remaining on a student's record beyond a duration equal to that of the original course will be changed to the grade to which the Student would otherwise be entitled. No Credits earned.</td> </tr> <tr> <td>DNC</td> <td>Did not Complete</td> <td>The grade DNC (Did Not Complete) is recorded if a student has either withdrawn after 75% of the scheduled Course duration; or not attempted a compulsory item of Assessment within a Course. No Credits earned.</td> </tr> </tbody> </table>	Grade	Meaning	Criteria	CR	Credit Recognition <sup>1</sup>	The student has applied for and been awarded a credit recognition from another qualification	CTG	Continuing <sup>2</sup>	The Course runs for more than one semester and the final Summative Assessment has not yet occurred. No Credits earned	DEF	Deferred	The student has approval to complete a Course Assessment beyond the schedule date. Unless an exception has been approved, any Deferred Grade remaining on a student's record beyond a duration equal to that of the original course will be changed to the grade to which the Student would otherwise be entitled. No Credits earned.	DNC	Did not Complete	The grade DNC (Did Not Complete) is recorded if a student has either withdrawn after 75% of the scheduled Course duration; or not attempted a compulsory item of Assessment within a Course. No Credits earned.																																	
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<p><b>6. Aromatawai Mahinga   Assessment Procedures</b></p> <p><i>Assessment Procedures comply with Unitec’s Assessment Moderation and Grades Policy and associated procedure.</i></p>	<p><b>6.1 Ākoranga Aromatawai   Course Assessment</b>  Courses employ both formative and summative assessment activities. Formative assessments do not contribute to the final grade for a given course. All summative assessment elements are compulsory unless otherwise approved and noted in course information.</p> <p>Students must attempt all compulsory assessment activities in order to pass and receive credit for any course. Students who do not attempt a compulsory item of assessment may be awarded a ‘Did Not Complete’(DNC) for the whole course and may not earn any credits.</p> <p><b>6.2 Aromatawai I Roto I Te Reo   Assessment in Te Reo</b>  All students have the right to submit any summative assessment task in Te reo Māori. The process for submission of summative assessment work in Te reo Māori is governed by the Unitec Assessment in Te Reo Māori procedure and detailed in course material.</p> <p><b>6.3 Tāpaetanga Tōmuri   Submission and late submission of work</b></p> <ol style="list-style-type: none"> <li>The due dates for all summative assessment work will be notified at the commencement of each course;</li> <li>Any assessment that is submitted late (and does not have a prior approved extension) will be penalised by a deduction of 10% per day of the participants assignment mark, up to five (5) days, inclusive of weekends;</li> <li>Applications for extensions must be made by according to procedure noted in Student Handbooks and course documentation;</li> <li>Any extension will be carried out within a specified time period as agreed with the relevant academic authority and no further extensions will be granted;</li> <li>Extensions are not available for any controlled assessment (i.e. tests, and examinations);</li> <li>No assessment will be accepted five (5) days (inclusive of weekends) after the due date. If the assessment is not compulsory, the participants will receive a ‘zero’ grade for that assessment. If the assessment is compulsory, then the participants will receive a Did Not Complete (DNC) grade for the entire course.</li> </ol> <p><b>6.4 Whakamātautau Anō   Resubmission or Reassessment</b>  A student may be granted permission to undertake:</p> <ol style="list-style-type: none"> <li>a resubmission/reassessment for a failed assessment item within a course with the following conditions:</li> </ol>															

- i. an application for a resubmission/reassessment must be made within 5 days of receiving their marked assessment;
- ii. only one reassessment or resubmission per course;
- iii. resubmission/reassessment is not available for any controlled assessments (i.e. tests, and examinations);
- iv. any approved resubmission/reassessment will be carried out within a specified time period as agreed with the relevant academic authority;
- v. in all cases for resubmission, the original marked assessment will accompany resubmitted assessment. If resubmitted work is not accompanied by the original marked assignment, the resubmitted work will not be marked, and the original grade will stand;
- vi. the maximum grade for any resubmission/reassessment of an assessment is the lowest pass grade;
- vii. assessments that are handed in late are not eligible for resubmission or reassessment.

**Or**

- b. a reassessment for a failed course if they gained a mark of 40% or more in that course with the following conditions:
  - i. permission is granted on the recommendation of the relevant academic committee;
  - ii. any reassessment will be developed to reflect the learning outcomes of the course and their respective weightings;
  - iii. only one opportunity to undertake a reassessment of a course;
  - iv. reassessment is not available for any controlled assessments (i.e. tests, and examinations);
  - v. the reassessment must be taken within one month of the course end date;
  - vi. a student passing the reassessment will gain the minimum grade available as a pass in the course.

#### **6.5 Āhūatanga Aromatawai Motuhake | Affected Performance Consideration**

A student may apply for Affected Performance Consideration (APC) if:

- a. The student is unable to attend an examination, compulsory assessment or fixed time and place assessment activity due to illness, injury, bereavement or other critical circumstances
- b. The student's preparation for, or performance in an examination or any summative assessment has been seriously impaired due to circumstances beyond their control

Applications for APC are made by a student within 5 working days of the affected assessment event. Decisions to approve an APC and to apply any remedy are made according to the Assessment and Grading Procedures and Regulations.

#### **6.6 Pāhi Rāhui | Restricted Pass**

A restricted pass may be awarded in a course which was narrowly failed and where there is ample evidence that marginal failure is compensated by good overall performance under the following conditions:

- a. A minimum mark of 45% overall has been achieved including a minimum of 35% has been achieved in the exam, and/or a minimum of 35% has been achieved in the coursework;
- b. Restricted passes are not permitted for MG7101 Engineering Project or MG7121 Professional Engineering Practice;
- c. A restricted pass is awarded at the discretion of the relevant academic authority and may not be applied for directly by a student;
- d. A restricted pass is non-advancing and may not be used to meet the prerequisite of another course;
- e. A student can graduate with one restricted pass only;
- f. A student may decline the award of a restricted pass by notifying the relevant academic authority in writing not later than 20 working days from notification of the results.

#### **6.7 Tuaruatanga | Repeating Courses**

Students who are repeating a Level 1–8 course would normally be required to submit all assessment items. In some cases, with the prior approval of the relevant academic authority, students may not be required to repeat an equivalent assessment item that they had previously passed. This should be negotiated within the first two weeks of the commencement of the course and will specify any course

	<p>grade that will be carried over. All course work marks carried through must be reported to the NZ BEngTech Quality Assurance Group annually.</p> <p>Students may enrol and repeat a course that they have failed only once. Permission to enrol for a third time is governed by Exclusion provisions below.</p> <p><b>6.8 Whakakorenga   Exclusions</b> No student will be allowed to enrol in any course more than twice unless there are exceptional circumstances approved by the relevant academic authority.</p> <ol style="list-style-type: none"> <li>a. Any Student who fails to achieve at least 50 per cent of the credits that he or she is enrolled in in any 12-month period may be excluded by the relevant Academic Authority from re-enrolling in any further courses. The decision whether students can re-enrol in further courses will be based on a student’s likelihood of succeeding in further study and will be made by the relevant Head of School.</li> <li>b. When calculating the 12-month period in a. above, Unitec reserves the right to include any relevant time spent by the Student studying at another tertiary institution.</li> <li>c. A Student who has not achieved a Pass Grade in the same Course on two occasions shall not be enrolled again for that Course except with the permission of the relevant Academic Authority.</li> <li>d. The relevant Academic Authority will advise the Student in writing of their decision, and the reasons for such decision, and any orders made.</li> </ol> <p><b>6.9 Examination Regulations</b> All formal examinations in this programme are governed by the Unitec Examinations Regulations;</p> <p><b>6.10 Tono Pira   Appeals</b> Students may appeal the decisions made under these regulations in accordance with the Student Appeal Procedure.</p>
<p><b>7. Whakaritenga Whānui   General Provisions</b></p>	<p><b>7.1 Whakamāramatanga ā-kaupapa   Definition of Terms</b> In these regulations, unless the context otherwise requires, the following definitions shall apply:</p> <ul style="list-style-type: none"> <li>• ‘Relevant academic authority’ refers to an individual or role holder, or in some cases a committee, who have been delegated the authority to make a decision within a specific circumstance. A schedule of the various relevant academic authority delegations is maintained by the Programme Academic Quality Committee responsible for the Programme.</li> </ul> <p><b>7.2 Āhuatanga Tauwhirowhiro Ritenga   Transitional Arrangements</b> Accredited providers will ensure that transition arrangements from previous Engineering Diplomas comply with the provider’s Quality Management System.</p>