

New Zealand Certificate in Electrical Engineering Theory (Level 3)

MOE Code	NZ2387	Level	3	Duration	1 academic year (full-time)	Version	1
Delivery	Full-time, Intramural. Part-time option available					Intakes	Semesters 1 and 2
Strategic purpose	<p>The purpose of this qualification is to provide the electrical industry with people who have introductory knowledge that underpins safe electrical installation, testing, commissioning, and servicing of electrical installations and equipment.</p> <p>The qualification provides pre-entry foundation knowledge of electrical engineering and is suitable for those who wish to enter the industry and who do not yet have an electrical apprenticeship agreement. Graduates of this qualification are not electricians but will have an operational and theoretical knowledge of electricity production, distribution, and utilisation, and can carry out a limited range of prescribed electrical work safely and ethically under general supervision in accordance with the Electricity Act 1992.</p>						
Graduate profile	<p>Graduates of this qualification will, in the context of the wider electrical industry and under supervision and in a controlled environment, be able to:</p> <ul style="list-style-type: none"> Apply fundamental knowledge and principles of electrical theory and practice, including electrical protection, to the installation and maintenance of electrical systems and equipment. Apply fundamental knowledge of fault diagnosis and testing techniques of electrical systems and equipment. Apply safe working procedures and practices, and identify and report electrical and other hazards. Ensure their own activities are within legal limitations of the electrical legislation. Apply fundamental knowledge and principles to the installation and maintenance of electrical machines. Apply fundamental knowledge and principles to the installation and maintenance of electrical equipment in special electrical situations. Work ethically and professionally within the electrical industry, as an electrical apprentice, including maintaining current competency and communicating with stakeholders on electrical and related matters. 						
Education pathway	<p>This qualification provides one of two entry pathways into the electrical industry and is intended for candidates who do not have an electrical apprenticeship agreement.</p> <p>The second entry pathway is through an apprenticeship agreement where candidates will be signed directly into the New Zealand Certificate in Electrical Engineering Theory and Practice (Trade) (Level 4) [Ref: 2388]. On completion of this qualification graduates may progress to higher level qualifications within the electrical industry such as the New Zealand Certificate in Electrical Engineering Theory and Practice (Trade) (Level 4) [Ref: 2388], or the New Zealand Diploma in Engineering [Ref: 112950]. Graduates may also progress to degree level programmes.</p>						
Employment pathway	<p>Graduates will be equipped with the skills, knowledge, and attributes to work in apprenticeships in the electrical industry in the field of their choice with guidance, mentoring, and supervision in accordance with the Electricity Act 1992.</p> <p>Examples of roles that this qualification may lead to are Electricity Supply Electrical Apprentice, Domestic/Commercial Electrical Apprentice, or Industrial Electrical Apprentice, or apprenticeships in other electrical related sectors.</p> <p>Graduates may also be able to work in areas such as electrical wholesaling or retailing as a counter sales person, or electrical meter readers.</p>						
Award(s)	New Zealand Certificate in Electrical Engineering Theory (Level 3)						
Completion requirements	<p>120 credits, as listed in Programme Structure.</p> <p><i>This programme has been accredited by NZQA. This programme is partially assessed against NZQA assessment standards and credits gained for the standards will be reported to NZQA.</i></p>						
Credits towards other qualifications	This qualification is not a prerequisite for the New Zealand Certificate in Electrical Engineering Theory and Practice (Trade) (Level 4) [Ref: 2388]. However, credits gained for this qualification will contribute towards that qualification.						
Entry requirements	<p>All applicants must:</p> <ul style="list-style-type: none"> be at least 16 years old at the time the programme commences be physically able to complete the programme specific outcomes have achieved the New Zealand Certificate in Educational Achievement (NCEA) (Level 1) in Mathematics, English, and Physics or General Science, or equivalent qualifications before starting programmes leading to the qualification. <p>Applicants for whom English is not a first language must have an IELTS General or Academic score of 5 with no band score lower than 5; or an accepted international equivalence.</p>						
Credit recognition	Credit from Recognition of Prior Learning, Credit Transfer and Unit Standard Transfer (if applicable) will be in accordance with the policy <i>Credit Recognition (05.004)</i> .						
Time limit for completion	3 academic years from initial enrolment						
Programme structure							
Note: Unit standards listed in this programme are correct at the time of publication, but may be subject to change as required by NZQA.							
Code	Title				Credits		Level
Compulsory courses							
3508.0001	Electrical Work Practices				15		3
3508.0002	DC Fundamentals				15		3
3508.0003	Installation Fundamentals				15		3
3508.0004	Electrical Applications				15		3
3508.0005	Electricity Systems				15		3
3508.0006	Electricity Supply and Distribution				15		3
3508.0007	Circuit Design and Operation				15		3
3508.0008	Electrical Machines				15		3
Course prescriptors							
Title		Code		Credits		Level	
Electrical Work Practices		3508.0001		15		3	
Aim: To acquire fundamental operational and theoretical knowledge of electrical work practices. <i>Students may also be assessed against unit standards: 29465, 29468, 29466, and 29467</i>							
DC Fundamentals		3508.0002		15		3	
Aim: To introduce fundamental knowledge and principles of Direct Current (DC) electrical installation practices. <i>Students may also be assessed against unit standards: 25070, 25071, and 25072</i>							

Title	Code	Credits	Level
Installation Fundamentals	3508.0003	15	3
Aim: To introduce fundamental knowledge and principles of electrical installation practices and associated legislation and standards. <i>Students may also be assessed against unit standards: 750, 15852, 15866, 29469, 29470, and 29471</i>			
Electrical Applications	3508.0004	15	3
Aim: To understand and apply fundamental knowledge of electrical theory and practice to the installation and maintenance of electrical systems and equipment. <i>Students may also be assessed against unit standards: 29472, 29473, and 29474</i>			
Electricity Systems	3508.0005	15	3
Aim: To extend knowledge of electrical systems and applications of direct and alternating current. <i>Students may also be assessed against unit standards: 29475, and 29476</i>			
Electricity Supply and Distribution	3508.0006	15	3
Aim: To gain understanding of the fundamentals of the NZ electricity supply system and devices used to ensure the safety and protection of users and installations. <i>Students may also be assessed against unit standards: 1204, 5932, 15848, 29477, and 29478</i>			
Circuit Design and Operation	3508.0007	15	3
Aim: To understand the theory and application of electrical diagrams in terms of circuit design and lighting installations. <i>Students may also be assessed against unit standards: 29479, 29480, and 29481</i>			
Electrical Machines	3508.0008	15	3
Aim: To understand the theory and application of electrical machine protection, fault diagnosis, special power supplies and rotating machines. This course includes one compulsory unit standard:			
<i>Code</i>	<i>Title</i>	<i>Credits</i>	<i>Level</i>
29484	Demonstrate knowledge of theory and practice for electrical workers	3	1
<i>Students may also be assessed against unit standards: 15855, 29482, 29483, and 19557</i>			