Te Waka Te Pokapū Whakawā i Kā Mātauraka o Mua
Centre for Assessment of Prior Learning (CAPL)

CAPL Application Pack

New Zealand Certificate in Fabrication(Trade) Level 4 with strands in Heavy Fabrication, Light Fabrication, and Steel Construction

(NZ2719) 255-270 credits, version 1

Your Experience: Our Qualifications

About the New Zealand Certificate in Engineering Fabrication (Trade)

This qualification recognises the skills required to safely and independently perform fabrication tasks within their chosen discipline, to industry standards in a broad range of sectors within the fabrication or construction industries. Specific roles for each of the strands may include:

- Heavy Fabrication strand - Process Plant Fabricator, Fabricator for pressure equipment, heavy transport equipment, or machinery, etc
- Light Fabrication strand - Sheet Metal Worker, Process Plant Fabricator
- Steel Construction strand - Structural steelworker for buildings, bridges and cranes, etc.

NOV 2022

Graduate profile evidence requirements

Graduates of this qualification will be able to:

- Apply an understanding of the relevant Health and Safety legislation and workplace safety culture in order to work safely and meet responsibilities in a commercial engineering fabrication environment
- Interpret drawings and/or specifications and select and use the appropriate fabrication materials, processes, tools, and equipment for the fabrication task being undertaken
- Apply relevant knowledge of fabrication principles and practices, and problem solving skills, to perform engineering fabrication tasks to industry standards
- Apply knowledge of welding to safely weld to an appropriate industry standard in a commercial engineering fabrication environment
- Apply an understanding of effective and efficient processes and principles, and quality systems to the fabrication of components and/or provision of services in a commercial engineering fabrication environment
- Practise effective communication within a mechanical engineering team and the wider workplace
- Recognise the limits of own ability and the importance of working with integrity and maintaining currency in the engineering fabrication field

Graduates of the Heavy Fabrication strand will also be able to:

- Produce a range of heavy fabricated products, including trucks and trailers, earthmoving machinery, manufacturing equipment, and pressure vessels from heavy gauge plate, sections, and pipes using the appropriate tools and current relevant techniques

Graduates of the Light Fabrication strand will also be able to:

- Produce a range of light fabricated products such as ducting, architectural fixtures, and balustrading from light gauge sheet, sections and pipes using the appropriate tools and current relevant techniques

Graduates of the Steel Construction strand will also be able to:

- Produce and install a range of structural steel elements for building and civil engineering projects, using the appropriate tools and current relevant techniques

If you choose more than one strand the fee will be higher proportionally than that listed in the Information Pack for a single qualification.

English Language Requirements

If English is not your first language, you may also be required to provide evidence of your English language skills as listed below. If you have no evidence of your English language skills and are a New Zealand citizen or permanent resident, contact us.

IELTS 5.5 Academic (no lower than 5.5 in any subtest).

This level of English is essential. If you are international and can demonstrate to us that your English is above this level we may accept you for assessment without an IELTS test.

Specific Evidence Requirements

Please read through all outcomes first before beginning to outline your evidence.

For each graduate outcome on the following pages please:

- Tick the boxes for the outcome requirements you know or have skills in and can provide evidence for; then tick the type of evidence you can give for each outcome (tick as many as you can). You MUST be able to supply supporting evidence. The same evidence can be used for more than one outcome.
- Include relevant courses undertaken and workplace responsibilities (e.g. Site Safe Passport, Health and Safety officer, welding ticket).

Outcomes	Your Evidence (your evidence may be used for more than one outcome)
1 Apply an understanding of Health and Safety legislation and workplace safety Can you ☐ *Explain your own responsibilities in the workplace under relevant current Acts and Regulations* ☐ *Explain machine guarding principles and requirements* ☐ *Work safely and contribute to a safe workplace* ☐ *Explain how to identify, assess and control critical risk situations and associated hazards; and isolate, report on, and audit machines* ☐ *Explain what Personal Protective Equipment (PPE) is and what PPE is required by your industry*	I can ☐ *Talk about this with the assessor* ☐ *Provide written or photo evidence* ☐ *Provide proof from an employer* ☐ *Demonstrate this*
2 Interpret drawings and/or specifications & select and use appropriate materials, processes, tools and equipment for the task being undertaken Can you ☐ *Produce and read engineering sketches* ☐ *Produce and read simple component drawings* ☐ *Calculate and use mechanical engineering units of measurement (Metric)* ☐ *Plan a job – process analysis, sequence, risk assessment, job costing, best materials to use, ergonomics, understand how objects fit together in 3D* ☐ *Explain the composition and characteristics of engineering materials (including where you would find this information if you work with a new material)* ☐ *Choose available and appropriate process/tools/ equipment to suit, material, plan, etc* Although not required you may also ☐ *Use Basic Computer Aided Design (CAD)* ☐ *Understand Computer Numerical Control (CNC) machines*	I can ☐ *Talk about this with the assessor* ☐ *Provide written or photo evidence* ☐ *Provide proof from an employer* ☐ *Demonstrate this*
3 Apply relevant fabrication principles and practices, and problem solving skills Can you ☐ *Develop fabrication patterns for simple three-dimensional objects* ☐ *Develop jigs to enable assembly* ☐ *Understand and apply mistake proofing, process analysis, and sequencing* ☐ *Form, shape, and apply distortion control* ☐ *Cut materials using mechanical or thermal equipment, including manual and mechanised processes* ☐ *Explain damage minimisation* ☐ *Select and inspect simple lifting appliances, sling and secure loads, and carry out lifting procedures* ☐ *Carry out all work efficiently and according to specifications* ☐ *Interpret relevant standards such as codes of practice, Australian/New Zealand standards in welding*	I can ☐ *Talk about this with the assessor* ☐ *Provide written or photo evidence* ☐ *Provide proof from an employer* ☐ *Demonstrate this*

Outcomes	**Your Evidence** (your evidence may be used for more than one outcome)
4 Apply knowledge of welding to safely weld to an appropriate industry standard in a commercial engineering fabrication environment Can you *Weld using (note that all 4 are not required although you should now the different uses for each)-* ☐ *gas metal arc (GMAW)* ☐ *manual metal arc (MMAW)* ☐ *gas tungsten arc welding (GTAW)* ☐ *flux cored arc welding (FCAW)* ☐ *Perform common welding and cutting techniques on mild steel, stainless steel and aluminium* ☐ *Weld steel and steel structures and other metals to a general purpose industry standard using the relevant welding process and positions (note: positions must include downhand, as a minimum)* ☐ *Fillet and Butt in three different processes, thermal cutting and/or gouging* ☐ *Apply known solutions/methods to distortion control*	i can ☐ *Talk about this with the assessor* ☐ *Provide written or photo evidence* ☐ *Provide proof from an employer* ☐ *Demonstrate this*
5 Apply an understanding of effective and efficient processes and principles, and quality systems to the fabrication of components and/or provision of services Can you ☐ *Explain different quality system models, e.g. lean manufacturing* ☐ *Identify and eliminate wasteful processes* ☐ *Apply the concepts of continuous improvement* ☐ *Explain quality control* ☐ *Explain process planning* ☐ *Explain delivery in full, on time and to specifications*	I can ☐ *Talk about this with the assessor* ☐ *Provide written or photo evidence* ☐ *Provide proof from an employer* ☐ *Demonstrate this*
6 Practise effective communication within a mechanical engineering team and the wider workplace Can you: ☐ *Confirm and clarify instructions* ☐ *Explain the importance of completing workplace documentation* ☐ *Communicate with teammates, customers, supervisors, other management (including awareness of other cultures and languages in the workplace).* ☐ *Communicate health and safety matters* Although not required you may also: ☐ *Mentor apprentices, peers, etc.*	i can ☐ *Talk about this with the assessor* ☐ *Provide written or photo evidence* ☐ *Provide proof from an employer* ☐ *Demonstrate this*

Outcomes	Your Evidence (your evidence may be used for more than one outcome)
7 Recognise the limits of own ability and the importance of working with integrity and maintaining currency in the engineering fabrication field Can you ☐ *Work to an acceptable standard for a tradesperson* ☐ *Seek advice or guidance when required* ☐ *Show an understanding of alternative manufacturing and engineering processes* ☐ *Show continual/lifelong learning and knowledge acquisition* ☐ *Research new technology, processes, practices, equipment*	I can ☐ *Talk about this with the assessor* ☐ *Provide written or photo evidence* ☐ *Provide proof from an employer* ☐ *Demonstrate this*
STRANDS – choose one (or more, but see page 2)	
Heavy Fabrication Strand	
Produce a range of heavy fabricated products, including trucks and trailers, earthmoving machinery, manufacturing equipment, and pressure vessels from heavy gauge plate, sections, and pipes using the appropriate tools and current relevant techniques Can you: ☐ *Perform a range of advanced positional welding techniques of at least one process relevant to your chosen strand (for example - structural steel all positions, aluminium plate all positions, repair weld non-ferrous metals, stainless tube, aluminium pipe).* ☐ *Demonstrate operational knowledge of welding quality assurance/control principles and procedures, including standards used, process theory, and trouble shooting.* ☐ *Manufacture heavy fabricated products that demonstrate knowledge and skills of advanced fabrication principles and processes. This should include complex forming and shaping tasks covering transitions and cutting plans, proficient use of jigs and assembly techniques, quality assurance principles including alignment of parts and distortion control, confirming work is to specifications and documenting and reporting work. It should also include use of the equipment required to handle heavy materials.* ☐ *Interpret and identify problems and construct complex fabrication drawings and patterns for the fabrication industry. Should include evidence of common transitions (complex radial line, triangulation and cutting plans); use of CAD or CAD related programmes, including use of NZS/AS 1100.* ☐ *Describe the use of common fabrication materials and fasteners used in the fabrication industry* ☐ *Cost a job and interpret data* ☐ *Use engineering calculations and engineering physics solutions to solve familiar, and unfamiliar, welding and fabrication problems.* ☐ *Describe your own work environment with regard to health and safety codes of practice, job planning, risk assessment, organisational methods, quality systems and standards used.*	i can ☐ *Talk about this with the assessor* ☐ *Provide written or photo evidence* ☐ *Provide proof from an employer* ☐ *Demonstrate this*

Outcomes	Your Evidence (your evidence may be used for more than one outcome)
Light Fabrication Strand	
Produce a range of light fabricated products such as ducting, architectural fixtures, and balustrading from light gauge sheet, sections, and pipes using the appropriate tools and current relevant techniques Can you:	i can ☐ *Talk about this with the assessor* ☐ *Provide written or photo evidence* ☐ *Provide proof from an employer* ☐ *Demonstrate this*
☐ *Manufacture light fabricated products that demonstrate knowledge and skills of advanced fabrication principles and processes. This should include complex forming and shaping tasks covering transitions and cutting plans, proficient use of jigs and assembly techniques, quality assurance principles including alignment of parts and distortion control, confirming work is to specifications and documenting and reporting work. It should also include use of the equipment required to handle light materials.*	
☐ *Perform a range of advanced positional welding techniques of at least one process relevant to your chosen strand (for example - structural steel all positions, aluminium plate all positions, repair weld non-ferrous metals, stainless tube, aluminium pipe).*	
☐ *Demonstrate operational knowledge of welding quality assurance/control principles and procedures, including standards used, process theory and trouble shooting.*	
☐ *Demonstrate use of engineering calculations and engineering physics solutions to solve familiar, and unfamiliar, welding and fabrication problems.*	
☐ *Interpret and identify problems and construct complex fabrication drawings and patterns for the fabrication industry. Should include evidence of common transitions (complex radial line, triangulation and cutting plans); use of CAD or CAD related programmes, including use of NZS/AS 1100.*	
☐ *Describe the use of common fabrication materials and fasteners used in the fabrication industry*	
☐ *Cost a job and interpret data*	
☐ *Describe your own work environment with regard to health and safety codes of practice, job planning, risk assessment, organisational methods, quality systems and standards used, and be able to give examples related to specific tasks.*	
☐ *Demonstrate a range of finishing skills*	

Outcomes		Your Evidence (your evidence may be used for more than one outcome)	
Light Fabrication Strand			
	Produce and install a range of structural steel elements for building and civil engineering projects, using the appropriate tools and current relevant techniques Can you:		i can
☐	*Perform a range of advanced positional welding techniques of at least one process relevant to your chosen strand (for example - structural steel all positions, aluminium plate all positions, repair weld non-ferrous metals, stainless tube, aluminium pipe).*	☐	*Talk about this with the assessor* *Provide written or photo evidence* *Provide proof from an employer* *Demonstrate this*
☐	*Demonstrate operational knowledge of welding quality assurance/ control principles and procedures, including standards used, process theory and trouble shooting.*		
☐	*Demonstrate knowledge and skills of steel construction principles and processes including forming and shaping - Portals, Beams, Radius profiles and Pipe branches – and quality assurance principles including alignment of parts and distortion control*		
☐	*Manufacture a range of structural steel elements, including care, maintenance and use of the equipment required to handle structural materials*		
☐	*Select and apply broad operational and theoretical knowledge of site installation and rigging techniques, and select appropriate mobile or fixed platforms in relation to operational requirements*		
☐	*Safely use elevated work platforms, mobile scaffolds, rigging equipment (qualification/unit standard evidence required).*		
☐	*Install a range of structural steel elements on site. Should include evidence of planning and managing all health and safety requirements of 2-3 jobs, including ergonomic considerations, according to government regulations and procedures, determining, planning and undertaking each job as per drawings, engineer's instructions associated standards and customer considerations, evaluating completed tasks and confirming work is to specifications; documenting and reporting work.*		
☐	*Develop basic engineering drawings using CAD or CAD related programmes -drawing construction patterns and transitions of complex steel construction components, use AS/NZS1100.*		
☐	*Describe the use of common fabrication materials and fasteners used in the fabrication industry*		
☐	*Cost a job and interpret data*		
☐	*Use engineering calculations and engineering physics solutions to solve familiar, and unfamiliar, welding and fabrication problems.*		
☐	*Describe your own work environment with regard to health and safety codes of practice, job planning, risk assessment, organisational methods, quality systems and standards used.*		

How do I apply?

To make a CAPL application, please supply:

Your Checklist

1 A completed **Ara Admission & Enrolment form** (leave Section 2 blank)
(Please note: A student loan via StudyLink is not a payment option for the CAPL process, but please talk to us about our interest-free instalment payment plan*). ☐

2 Your current and detailed **Curriculum Vitae (CV)** which should contain: ☐

- relevant work history including your positions, tasks and responsibilities
- knowledge and skills required for you to carry out your job
- formal qualifications eg school, polytechnic, university, trade certificates
- informal qualifications eg 'in house' workplace training workshops
- relevant life experience eg in-house workplace teams, managing stress etc

Your CV may be quite different from this. Please use whatever format is understood by your industry but in-depth enough to show your level of skills across your specialisation, with emphasis on the critical thinking/research required.

3 A **personal statement** which summarises your experience and learning, and which supports this application. ☐

4 **Examples of your work** (a few only as you are not being assessed at this stage). If sending files electronically, they must be in an easily readable format (pdf, jpg, rep3, etc) and if large, need to be sent by Drop Box, OneDrive, Google Drive or equivalent, or by CD or DVD. ☐

** Conditional on a credit check undertaken by Ara and approved. No results are released until all fees have been paid.*

Please email your application to **capl@ara.ac.nz**

or post it to:

CAPL
Academic Services Division
Ara
PO BOX 540
Christchurch 8140