ENGINEERING E2E – EDUCATION TO EMPLOYMENT

Micro-credentials in engineering education: Finding ways forward in the NZ context

What are Micro-credentials?

Micro-credentials are packages of learning designed to meet specific learner needs. They are generally smaller than conventional qualifications, and are emerging as an important part of the mix of alternative credentials. They validate skills and learning linked to specific workforce demands.

Alternative credentials include industry training, skills-based short courses, MOOCs and other online credentials. These credentials are often competency-based and can include pathways such as recognition of prior learning and recognition of current competency.

Not everyone uses the same definition of micro-credentials

NZQA is leading three pilots of micro-credentials. Their working definition argues that micro-credentials are not units of learning toward a full qualification, rather they demonstrate the acquisition of discrete skills and knowledge that are important to learners and employers.

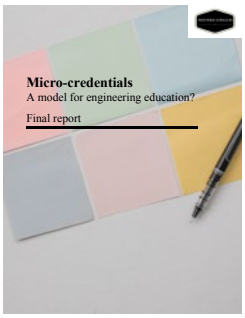
This type of 'just-in-time' training has a place, particularly as part of the professional development of engineers. However, the international portability of engineering qualifications, the credibility of engineering education in New Zealand and assumptions about safe work practices are all based on larger programmes of study.

The way engineering programmes are delivered could be an area of innovation.

What is Engineering e2e doing?

Engineering e2e has engaged extensively with providers of engineering education, employers of engineers, professional associations and policy agencies. There is a keen interest in exploring the potential role of micro-credentials, but some uncertainty about where best to invest energy and effort.

In July 2017, Engineering e2e published the research report *Micro-credentials: A Model for engineering education*, which found that many of the elements needed for micro-credentials to suceed are in place in New Zealand. There are opportunities to offer micro-credentials across the spectrum of engineering education and many local and international models to draw upon.



Our work prioritises the uptake of the NZDE in engineering disciplines that have been under-served, and for people in employment.

Our efforts have generated several potential candidates for micro-credentials. The graphic below sets these potential pilots alongside other micro-credentials being offered. An increasing range of micro-credentials is also available to learners in New Zealand through local and international providers.

What's next?

We will select pilots for further development and detailed design. The experience of other attempts to introduce micro-credentials suggests that this development phase can be time-consuming. As a result, we are looking to continue to provide support and promote collaboration among the pilot leads.

We will engage with NZBED, engineering educators and IPENZ and work with the five current trials of micro-credentials to learn from their experience. We will liaise with NZQA and other Government agencies to ensure alignment with the emerging policy and regulatory settings.

Find out More...

Progress reports on all Engineering e2e initiatives can be found at **www.engineeringe2e.org.nz/Progress**

Current trials in New Zealand and potential Engineering e2e pilots in micro-credentials

Current trials

NZQA PILOTS	OTHER PILOTS
• Self-driving Car Engineer Nanodegree • Edubits • Young Enterprise Scheme	• Promoting engagement with NZDip in Agribusiness • Building and construction 'hop-on/hop-off'

Potential Engineering e2e pilots

PREPARATION FOR NZDE	NZDE	OTHER LEVEL 6 QUALIFICATIONS	PROFESSIONAL DEVELOPMENT
• Engineering and Science for Pasifika	• Micro-credentials for core streams • Fire Engineering stream • 'Green' building credentials	• Infrastructure Asset Management	• Electrical Engineering

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