

CASE STUDY: Distance Education – Master of Engineer Practice, University of Southern Queensland (USQ)

Description

The Master of Engineer Practice program is a distance education program that provides an alternative pathway to the Bachelor of Engineering program for experienced Engineering Technologists. It was developed to address a need within the engineering industry for an alternative and flexible pathway for individuals already working in the industry. The program was developed by the USQ Engineering faculty in close collaboration with Engineers Australia. It incorporates the recognition of prior workplace learning and an individualised study plan, which provides Technologists with the opportunity to gain an award accredited by Engineers Australia that qualifies them to work as a professional engineer. It is a 12-unit program consisting of 7 units of core courses and 5 units of technical courses. The program is highly flexible, and allows students to negotiate an individual Pathway to Graduation Plan via a self-assessment portfolio. The self-assessment portfolio enables students to assess their current attributes and capabilities against the relevant Engineers Australia competencies and the Master of Engineering Practice competencies and criteria, to demonstrate that they have the required knowledge, experience and skills to undertake the Master of Engineering Practice program. Students use detailed Career Episode Reports (CERs) to outline the skills and competencies they have demonstrated in the workplace, and develop a Pathway to Graduation Plan that defines the courses of study they will complete, along with a detailed plan for workplace experiences that they will undertake to gain the requisite competencies.

The program was developed for experienced engineering technologists who wish to take an alternative pathway to gain professional engineer status. That is, individuals with a Bachelor of Engineering Technology degree (or equivalent) who have at least 5 years of relevant experience in the engineering industry. Students who have extensive experience in the relevant areas can use this to demonstrate many of the technical competencies in their major and thus reduce the number of courses they have to study to complete the degree.

Engineers Australia (EA) identified a need for experienced engineering technologists to have an alternate pathway to advance their careers to professional engineer status, based on competencies rather than courses. EA identified the USQ Engineering faculty as their preferred institution for the development and delivery of the program because of the quality of USQ's distance programs. Development of the program commenced in 2002.

Objectives of the program

To facilitate opportunities for experienced engineering technologists to advance their career to professional Engineer status

Program “drivers” – Engineers Australia based on requests from within the industry, identified program needs for engineering technologists with industry experience to enable them to advance to professional engineer status.

Structured experiences: Students use reflective practice to conduct a self-assessment of their workplace learning and analyse this to define the competencies already acquired and competencies required for professional engineer status. Engineers Australia approached USQ Engineering faculty about developing flexible options for people with appropriate industry experience and qualifications to gain requisite qualifications as a professional engineer. The program design underwent various iterations of refinement and simplification, to ensure that it was flexible and able to accurately identify and assess workplace prior learning and requisite student competencies.

The assessment strategies and templates included in the first course of the Master of Engineering Practice program are designed to enable students to undertake a review of their current attributes and capabilities and to demonstrate that they have the required knowledge, experience, and skills to undertake the remaining courses in the Master program. Students complete a self-assessment portfolio in the first course in the program, which involves reflecting on their work experiences, discerning the learning that they acquired from those experiences, and writing up Career Episode Reports (CERs) that demonstrate their achievement in one or more of the specified graduate attributes and capabilities. The information in each CER must be verified and endorsed by a professional engineer. The CERs, along with detailed curriculum vitae (CV) and other supporting documents, form the student's self-assessment portfolio. Students use their self-assessment to develop a Pathway to Graduation Plan. The Pathway to Graduation Plan outlines the courses the student plans to study. The self-assessment portfolio is then examined by USQ Engineering staff who either approve the plan or request modifications to the plan.

The self-assessment process enables students to decide if they have sufficient experience, and if the program is appropriate for them and their career aspirations. They may decide transfer to the Bachelor of Engineering

Critical Success Factors

Enables students to use prior workplace learning to demonstrate competencies

Career Development Learning Elements

The program has a very strong focus on *self-assessment and reflection*. Activities in the self-assessment course aid students in their self-reflection by including information and guidelines on self-reflection and identification of knowledge, skills, attributes, personal characteristics, and contextual influences, along with questionnaires to enhance students' understanding of their learning styles, beliefs, and study strategies. Students identify their knowledge, skills, experiences, and strengths, identify any gaps or weaknesses, and prepare detailed plans for their program of study and their continuing professional development.

Workplace and opportunity awareness: Students in this program are already working in the industry and have identified an opportunity to further develop their career by enrolling in the Master of Professional Practice program.

Decision-making: Based on their self-assessments, students identify gaps between their existing competencies and those required for professional engineer status, and engage in a process of decision-making and goal-setting to determine how they will fill those gaps.

Transition skills: Students are currently working in the industry, so this CDL element is not a focus of the program.

