Features of Modern Engineering Education

Purpose/Objectives

The purpose of this workshop is to develop a shared understanding of the features of modern engineering education, to collect examples and share experiences. The outcome will allow participants to reflect on their teaching practice and contribute to modern program design.

Audience

The workshop targets the whole range of engineering (and science) educators and professionals. Not specific prior knowledge is required.

Overview

Compared to other sectors, education could be argued to have a large inertia. With large organisations run under government legislation, a workforce who often stay for decades, and societal expectations slow to change, this is hardly surprising. There are no doubt times when this inertia is a strength, steering education at all levels steadily through social, economic or political turmoil.

However, with technology, industry and the profession of engineering changing rapidly, is the inertia necessarily a strength?

Additionally, with the increased demand for engineers requiring a more diverse cohort necessarily being recruited to study engineering, is the current approach to engineering education up to the task?

This face-to-face workshop focuses on developing a shared understanding of the necessary features of a modern engineering education – going beyond the curriculum to consider the student journey to engineering graduate and professional engineer. In a second step it will collate examples of where workshop participants have seen these features implemented.

The workshop will allow participants to benchmark their understanding of a modern engineering education with their peers. Examples and experiences that exemplify these features will be discussed and shared, allowing participants to consider the application of these examples to their own practice.

Topics

Topic	Duration
Introduction and Background	0.5 h
Develop a common understanding of the features of a modern engineering education, through the lenses of the student journey, societal demands and industry requirements.	0.75 h
In small groups, share examples of best practice and personal experiences that demonstrate some of the features of a modern engineering education.	1.0 h
The examples and experiences shared will be discussed and compared, finishing with a reflection of how well these elements combine to meet the previously identified features.	0.75 h

Facilitators

The facilitators are part of a team that has recently undertaken a significant curriculum renewal project. The presenters have a professional practice background but also a track record in technical as well as engineering education research.

Alexander A Kist, University of Southern Queensland, Australia

Professor Alexander A Kist has a keen interest in student experience, learning & teaching quality, and governance. This includes both institutional quality assurance as well as delivery through online education and remote access laboratories. He has authored more than 140 scientific articles in teletraffic engineering, performance modelling, remote access laboratories and engineering education. He has served as an Education Committee and Education Quality member, elected Deputy Chair and Acting Chair of the USQ Academic Board. He is a member of the TEQSA Register of Experts, and his commitments to excellence are evident through both institutional and national teaching awards and grants.

Catherine Hills, University of Southern Queensland, Australia

Catherine Hills has ten years of industry experience as an automation engineer prior to joining academia. Her key areas of interest are transition to university and authentic assessment design. She has contributed to research in biomass gasification and remote access laboratories, along with engineering education and innovation in learning and teaching. She is currently the First Year Experience Lead for the School of Engineering where she is leading the implementation of a student-focused, strengths-based transition to university which is embedded in the curriculum.