

Bringing a Human Dimension to Engineering

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WORKSHOP MODE

In-person

OVERVIEW OF WORKSHOP

Numerous organisations including ACED (Australian Council of Engineering Deans) and EA (Engineers Australia) have called for engineers to better incorporate human and social dimensions into their practice. This is to support the mission of engineering to serve society, build greater community resilience and sustainability, and promote the profession in multiple ways to increase interest from diverse student groups. However, ACED's recent survey found 80% of academics lacked confidence to combine human and social issues with technical knowledge in teaching (ACED 2021). Humanitarian Engineering (HumEng) is a recent example where human and social dimensions have been woven together across engineering disciplines and competencies.

This workshop will explore current and leading practice for incorporating a human and social dimension into engineering education. It will explore potential reasons for a lack of confidence with teaching in this area, highlight potential approaches, and explore lessons learnt, both positive and negative, from the introduction and growth of Humanitarian Engineering in Australasia.

ACTIVITIES

A shared understanding of what is meant by the human and social dimensions of engineering will first be developed. Participants will be invited to share successes, challenges, and barriers they face for incorporating a human or social dimension into engineering education. Common themes will be identified and addressed in small groups. Results from the current AAEE supported project on human and social dimensions in engineering education will be highlighted along with experiences from the presenters, to assist discussions and provide evidence and examples for participants.

TARGET AUDIENCE

No prior knowledge is required to participate in the workshop. The workshop is targeting educators currently, or seeking to, incorporate human and social dimensions into their programs and courses. The workshop will be delivered from an Australasian engineering education perspective.

OUTCOMES

Participants will develop further understanding of how human and social dimensions can be incorporated into engineering education, and hopefully leave with increased confidence, examples, and networks to support curriculum renewal and teaching. This could include curriculum approaches, ways to build expertise and confidence, and institutional support required for sustainable delivery.

REFERENCES (OPTIONAL)

ACED (2021). *Engineering Change The future of engineering education in Australia*, ACED.

KEYWORDS

Human and Social Dimensions, Humanitarian Engineering, Engineering Practice

PRESENTERS' BACKGROUNDS

All presenters are involved with Humanitarian Engineering education with their organisations and have broad experience of engineering education in general, including large first-year classes, project-based and service-learning, intensive delivery, and study abroad.