



## WORKSHOP

# Transforming Engineering Education through Critical Reflection

Grace Roberts <sup>a</sup>, Luke Smith <sup>b</sup>, Mark Abbott <sup>c</sup> and Irshaad Vawda <sup>d</sup>

*Engineers Without Borders Australia <sup>a</sup>, Engineers Without Borders UK <sup>b</sup>, Engineering Change Lab Canada <sup>c</sup>  
Engineers Without Borders South Africa/ International <sup>d</sup> Corresponding Facilitator's Email: [challenge@ewb-uk.org](mailto:challenge@ewb-uk.org)*

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## WORKSHOP MODE

Hybrid session during Perth business hours, and an additional online session out of Perth business hours.

## OVERVIEW OF WORKSHOP

Engineers Without Borders is a global movement of over 60 organisations, advocating for a stronger focus on the ethical, social, environmental and cultural aspects of engineering. Over the last decade 150,000 students have participated in an Engineers Without Borders' design challenge as part of their degree course. These design challenges enable university academics to respond meaningfully to best-practice engineering education trends and develop future-fit engineering competencies within graduates at scale. In 2020, a group of Engineers Without Borders International and Engineers Without Borders organisations from Australia, Brazil, Canada, India, the Netherlands, the Philippines, UK and USA, consulted on an open letter (see: <http://www.ewb-international.org/activities/engineering-education-wfeo/>) to influence changes to the international Graduate Attributes and Professional Competencies (GAPC) Framework. The updated GAPC framework has the potential to further transform the engineering profession, with graduates who are critical thinkers, thoughtful about the impact and outcomes of their work, capable of working in diverse and inclusive teams and are committed to lifelong learning. In this workshop we engage in the process of critical reflection on the role of engineers that we argue is required to meaningfully build the competencies that will ensure a sustainable future for all people and the planet.

## ACTIVITIES

Discussion based presentation with breakout groups, guided plenary and Q&A. Mural or other digital platforms will be used to consolidate input and sharing learning experience.

## TARGET AUDIENCE

Engineering researchers and educators. No prior knowledge needed.

## OUTCOMES

Learning outcomes are to practice critical reflection of engineering and its impacts, reflect on the current views of engineering that underpin engineering education and practice and connect with the call for transformative GAPC's that form the bases of engineering education and practice.

## KEYWORDS

transforming, responsible, universities, engineering, competencies, critical reflection

## PRESENTERS' BACKGROUNDS

Grace Roberts and Luke Smith coordinate the EWB Challenge programme, and the Engineering for People Design Challenge/ Efficiency for Access Design Challenge respectively. These deliver real-world project contexts to the classroom and inspire students to act responsibly. Irshaad Vawda and Mark Abbott have worked in the executive team at Engineers Without Borders South Africa and Canada respectively. Mark now leads the Engineering Change Lab in Canada and Irshaad is on the board of Engineers Without Borders International.