



## **Outline of the CEEDA study, March 2021**

A new generation of globally-recognised engineering programmes are seeking to nurture future leaders and innovators with the knowledge, skills and attitudes needed to solve the complex challenges of the 21<sup>st</sup> century. A defining characteristic of these programmes is a student-centred pedagogy that reaches across disciplinary boundaries and beyond the university environment. At their heart is a collaborative approach, often immersed in experiential, hands-on and/or project-based activities, where students advance and apply their learning through tackling authentic societal problems and, in many cases, develop physical prototype solutions. While some programmes have established online platforms for learning core engineering science principles, the collaborative learning approach is often underpinned by synchronous, face-to-face interaction and collaboration: between students, their facilitators and (in many cases) the wider community.

The global COVID-19 pandemic forced an immediate shift to online learning for universities across the world – including for engineering schools delivering, or aspiring to deliver, such innovative programmes. They are confronting the pressing question: how is it possible to deliver engaging and effective collaborative and/or project-based experiences remotely, and without access to fabrication labs or equipment? Hand-in-hand with this question is the wider issue of the long-term impact of COVID-19 and emergency teaching on the engineering education sector as a whole.

As universities look to formulate a longer-term educational vision in which online learning plays a more prominent role, the CEEDA study (Collaborative Engineering Education in the Digital Age) was launched. Exploring the global impact of COVID-19 emergency teaching on the engineering education sector, CEEDA will deliver two outputs, both of which will be open-source:

- 1. CEEDA report:** charting the lessons learnt from the current period of emergency teaching due to the COVID-19 pandemic, and how this experience might impact the trajectory of engineering education in the future. The report will be informed by consultations with global thought leaders, innovators and practitioners in engineering education and will be published on completion of the CEEDA study.
- 2. CEEDA website:** showcasing examples of best practice in engineering collaborative learning that are delivered partially or fully online as well as examining the wider response to emergency teaching at the host universities. Universities are drawn from those identified as current and emerging leaders in the 2018 MIT-commissioned report<sup>1</sup> and case studies will be built from interviews with key stakeholders, including university leaders, faculty, students, and other collaborators. Following the launch of the CEEDA website in April 2021, case studies will be added to the website throughout the 2020/21 academic year.

CEEDA is co-funded by a consortium of engineering schools and universities from across the world with a particular interest in collaborative and/or online learning. The study is led and undertaken by Dr Ruth Graham, a higher education consultant and author of the 2018 report on the global state of the art in engineering education<sup>1</sup>. Further information on the study is available from the CEEDA website at <https://ceeda.org>.

---

<sup>1</sup> Graham, R. (2018). The global state of the art in engineering education. *MIT Report, Massachusetts, USA*