

# Educational Tools

Today, we are living in a world that faces increasingly challenging multifaceted issues brought about by several mega trends, including the fourth industrial revolution, rapid urbanisation, global warming and an ageing society. With Volatility, Uncertainty, Complexity and Ambiguity (VUCA) characterising this era, it calls for a need for a different educational model in addressing these conditions and preparing students for their future challenges.

Unlike most universities which have rigid departmental disciplines, the **Singapore University of Technology and Design (SUTD)** is one of the first universities in the world to incorporate the art and science of design and technology into a multi-disciplinary curriculum. Its programme seeks to break down silos and bring together cross-disciplinary learning, cross-border learning experiences and human-centred engineering education. Established in collaboration with the Massachusetts Institute of Technology (MIT), SUTD aims to nurture technically-grounded leaders and innovators in architecture and sustainable design, engineering product development, engineering systems and design, and information systems technology and design, to serve societal needs.

In achieving this objective, SUTD's unique pedagogy is built around active, collaborative and experiential learning, and focuses on Big-Design, or Big-D, where design permeates every aspect of student learning throughout the entire undergraduate programme. This is also the guiding principle for this challenge.

## Challenge: Innovative Educational Tools

To design and fabricate an educational tool that enables students to experience, learn and internalise theoretical concepts in a hands-on and innovative manner. A good design should help students to grasp these difficult concepts intuitively. It should also enable them to foster concrete connections between relevant textbook knowledge and real-life industrial applications, thereby allowing them to apply the knowledge in solving related real-life challenges.