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35TH AUSTRALASIAN ASSOCIATION FOR ENGINEERING EDUCATION ANNUAL CONFERENCE
8-11 DEC 2024
THE ENGINEER AND THE WORLD

WORKSHOP

TechnoLab™ - Experiential Learning in Statics, Mechanics & Dynamics

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OVERVIEW OF WORKSHOP

The facilitator of this workshop has developed a novel on-the-desk Experiential Learning (EL) platform, named "TechnoLab™", that supports a wide range of lesson-focused experiment kits designed to specifically cover key topics in the foundation subjects of Engineering Statics Mechanics and Dynamics. A standout feature of these experiments is the patented approach of incorporating photogrammetry for mensuration of deflections of experiment test specimens when subjected to applied loading, in combination with a small ~A3-sized Pixi Frame™ testing Frame apparatus. Other innovative features that distinguish this platform from the products of other manufacturers include: its attractive, engaging appearance; the extensive range of experiment kits it supports; the large number of combinations in test parameter conditions ensures that no two pairs of students perform the same test, rendering the use of the platform as both plagiarism-resistant and ChatGPT-proof.

The 90-minute session will be divided into three approx. 30-minute blocks to briefly guide attendees through TechnoLab™'s range of experiment kits at the start of each block for i) Statics ii) Mechanics and iii) Structural Dynamics. Following this, attendees will be able to engage in performing one (or more) lesson-focused experiments on the TechnoLab™ system for themselves, working in pairs.

ACTIVITIES

Attendees will perform TechnoLab™ experiments in each of the three blocks guided by the facilitator and from "Step by Step" Instructions supplied in printed form alongside each associated Pixi Frame™ test-rig setup. Support software to facilitate obtaining experimental results and to enable comparison with their theoretical counterparts will be made available to participants - for use by them at these sessions only. Please bring along a laptop/notebook computer and preferably an iPhone/iPad device.

TARGET AUDIENCE

The target audience for this workshop is advocates of Experiential Learning in general, and course and subject co-ordinators of the key subjects: Engineering Statics, Mechanics and Dynamics.

OUTCOMES

Attendees will observe and discover for themselves, the distinct learning advantages over other forms of learning, provided by a lesson-focused EL system such as TechnoLab™.

KEYWORDS

Experiential Learning; hands-on; Statics; Experiment test-rigs.

PRESENTERS' BACKGROUNDS

Nicholas Haritos has been a long-serving academic in Civil/Structural Engineering at The University of Melbourne where, post his retirement in 2010, he is now an honorary Principal Fellow. He holds the position of Adjunct Professor at Swinburne University of Technology and is a registered National Assessor (Stage 2 - Charter) with Engineers Australia. He is the Managing Director of Strucomp P/L (est. 1996), providing specialist consulting services to industry and government. Strucomp has recently ventured into the development manufacturing and marketing of the TechnoLab™ and st**E**mhelp series of innovative EL products in engineering, for Tertiary and K-12 levels of schooling, respectively.