



# PROGRAM

The 21st International  
**CDIO Conference**

**Forging Connections:  
Synergies for a Sustainable Future**

Hosted by



**MONASH**  
University



2-5 June 2025



Monash College  
750 Collins St, Melbourne, Australia



[www.cdio2025.com.au](http://www.cdio2025.com.au)



5:00pm - 7:00pm  
Platform 28  
82 Village Street,  
Docklands

## Welcome Reception & Pre-Registration

8:00am

## Registration Desk Opens

8:30am - 9:15am  
Auditorium

**Conference Opening**  
**Professor Nicoleta Maynard**, CDIO2025 Conference Chair  
**Professor Yiannis Ventikos**, Dean of Engineering, Monash University

**Welcome to Country:**  
**Wurundjeri Elder Colin Hunter Jnr and Ganga Giri**

9:15am - 10:00am  
Auditorium

**Keynote Presentation**  
**Madeleine McManus OAM**, Chair, Yarra Trams; Global Director, Robogals and CEO, Centre for Professional Engineering Education

10:00am - 10:30am

## Morning Tea

10:30am - 12:00pm

1A – Artificial Intelligence and Emerging Technologies	1B – Workshop	1C – Roundtable Discussions	1D – CDIO Intro Workshop	Working Group	Working Group
Room 9.41 Session Chair: Katerina Yang	Room 9.42	Room 9.43	Room 9.44	Room 9.52	Room 9.53
<b>120 – Using immersive virtual experiment to develop safety mindset and process operation skills</b> Yunyi Wong, Ai Ye Oh, Katerina Yang, Sin-Moh Cheah	<b>102 – Developing teamwork skills through the “player” peer feedback model</b> McKenna Sperry, Samantha Jones, Nicole Larson, Thomas O'Neill	<b>176 – Challenges in design-implement projects in student groups with diverse academic backgrounds</b> Dag Raudberget, Patrik Cannmo	<b>Session 1 – Impact and benefits of CDIO approach to engineering education</b> Helene Leong	<b>Advancing the Role of Technicians within CDIO Programs</b> Mark Nivan Singh	<b>Future of CDIO – Working Towards 4.0</b> Suzanne Brink, Juha Kontio, Reidar Lyng
<b>182 – Secure local generative AI coding assistant: a CDIO approach</b> Zineb Hidila, Mohamed Tabaa					
<b>111 – Designing a digital twin virtual lab for PLC applications</b> Chew Lin Chia, Rick Chua					
<b>135 – The CDIO approach to develop AI-powered feedforward systems: the “prompt mentor”</b> Toh Yen Pang, Alex Kootsookos, George Wu, Chi-Tsun Cheng					

12:00pm - 1:00pm

## Lunch

1:00pm - 2:40pm

2A – Sustainability in Engineering Education	2B – Workshop	2C – Roundtable Discussions	2D – CDIO Intro Workshop	Working Group
Room 9.41 Session Chair: Zhengping Liow	Room 9.42	Room 9.43	Room 9.44	Room 9.52
<b>152 – Assessing sustainability in Kuwait's higher education institutions' engineering curricula</b> Hassan Salti, Hania El-Kanj, Suad Alradhwan, Fadi Alkhatib, Mohammed Abdul-Niby	<b>MATLAB Workshop Part 1 – 1:00pm- 1:50pm</b> Automatically grade problems and provide real-time feedback using MATLAB Grader Emmanuel Blanchard, Daniel Lim	<b>175 – Curriculum agility narratives roundtable</b> Suzanne Brink, Carl Johan Carlsson	<b>Session 2 – Purpose, tools and resources of CDIO initiative</b> Juha Kontio, Joanne Tanner	<b>Advancing the Role of Technicians within CDIO Programs</b> Mark Nivan Singh
<b>178 – Pathways to sustainability in engineering education: a constructively aligned change in framework</b> Tommaso Mondovi, Anna Wiecezorek				
<b>142 – Community-engaged problem-based learning (CE-PBL): preparing sustainable energy experts for applied contexts</b> Mominul Hasan, Bernd Moeller, Wulf Boie				
<b>112 – Contextualized roadmap to advancing sustainability in school of electrical &amp; electronic engineering</b> Chew Lin Chia, Sin-Moh Cheah				
<b>105 – Inculcating sustainability mindsets in students from architecture education through CDIO framework</b> Zhengping Liow, Sin-Moh Cheah	<b>MATLAB Workshop Part 2 – 1:50pm- 2:40pm</b> Improving learning outcomes in mechanical engineering dynamics Emmanuel Blanchard, Daniel Lim			

2:40pm - 3:00pm

## Afternoon Tea

3:00pm - 4:30pm

3A – From Inclusion to Integrity: Educating Engineers for Social Impact	3B – Workshop	3C – Roundtable Discussions
Room 9.41 Session Chair: Vairavel Gurusamy	Room 9.42	Room 9.43
<b>160 – From sharing to synergy: cultivating inclusive educational environments through EDI in CDIO</b> Elizabeth McCarthy, Aster Cosmos, Dana Bui, Helmy Cook, Prudence Perry	<b>138 – Innovating education to foster change agents for sustainability challenges</b> Tommaso Mondovi, Marcello Sala, Anna Wiecezorek, Chantal Brans, Isabelle Reymen	<b>107 – Using CDIO for non-engineering programs</b> Sin-Moh Cheah, Mark Nivan Singh, Zhengping Liow
<b>192 – Challenge based learning: cultivating social responsibility in a community connect course</b> Vairavel Gurusamy, Dhanenthiran M		
<b>146 – Closing the gap in engineering education: a positive Dpsychology approach to CDIO</b> Nikdokht Ghadiminia, Salman Saeidlou, Anne Nortcliffe		
<b>125 – Embedding ethics and professional responsibility in engineering education: preparing future engineers for industry 5.0</b> Isam Zabalawi, Khalil Khanafer, Mohammed Abdul-Niby		

4:30pm - 6:00pm  
Auditorium

## CDIO Council Meeting

# MONDAY 2 JUNE

8:30am Registration Desk Opens

9:00am - 9:15am **Welcome**  
Auditorium

9:15am - 10:00am **Keynote Student Panel: Students Re-engineering the Future of Education**  
Auditorium  
**Odetta Maher, Selina Porritt, David Loven, Ratu Esther-Kelvin and Jason Abi Chebli**, Monash University Students & Graduates

10:00am - 10:20am Morning Tea

10:20am - 12:00pm	4A – Industry Collaboration and Perspectives	4B – Workshop	4C – Roundtable Discussions	4D – CDIO Intro Workshop	Working Group
	Room 9.41 Session Chair: Svante Gunnarsson	Room 9.42	Room 9.43	Room 9.44	Room 9.52
	<b>151 – Building scalable industry collaboration in engineering education through the CDIO framework</b> Marika Säisä, Annukka Kinnari  <b>163 – Developing quality management competencies in software engineering: a CDIO approach</b> Marika Säisä, Annukka Kinnari  <b>126 – A framework for the teaching of autonomous mobile robotics</b> Aldo André Díaz-Salazar, José Rafael Rebêlo Teles, José Gabriel Rebêlo Teles, Eduardo Dias Peixoto, Alexandre Costa Ferro Filho, Nigel Joseph Bandeira Dias, Svante Gunnarsson  <b>122 – Commercial pilot education: aligning EASA 100 KSA with CDIO standards</b> Doris Novak, Tomislav Josip Mlinarić, Davor Mistrić, Petar Andraši  <b>171 – Transforming technical education through industry-institute collaboration ecosystem</b> Jerold John Britto John, Sivaprakasam Rajakarunakaran, Ganesan Lakshmanan, Gurusamy Vairavel	<b>159 – Australia-Asia nomadic curriculum design</b> Arlinta Barus, Siegfried Rouvrais, Haraldur Audunsson, Eka Sinambela, Sari Silalahi	<b>110 – Learning designs for learning from deliberate failure</b> Sin-Moh Cheah, Thijs Willems	<b>Session 3 – Implementing the CDIO Syllabus and Standards</b> Suzanne Brink, Reidar Lyng	<b>Designing the University of the Future – An International Perspective</b> Marcello Sala

12:00pm - 1:00pm Lunch

1:00pm - 2:40pm	5A – Transdisciplinary Approaches	5B – Sustainability in Engineering Education	5C – Workshop	5D – CDIO Intro Workshop	Working Group
	Room 9.41 Session Chair: Géza Fischl	Room 9.42 Session Chair: Marisol Rico-Cortez	Room 9.43	Room 9.44	Room 9.52
	<b>161 – Six months of engineering with CDIO approach</b> Yslam Orazov, Mukam Ekayev, Ulugbek Jummanov, Mekan Saipov, Nurjermal Bayramova, Dovletmyrat Porrykov  <b>148 – Designing for diversity: soft landings and developmental portfolios in aerospace education</b> Yinglu Tang, Ines Uriol Balbin, Daniël Peeters, Prem Sundaramoorthy, Baris Kumru, Mahsa Sajedi, Calvin Rans  <b>117 – Stakeholder analysis for curriculum transformation in higher engineering education</b> Cecile Gerwel Proches, Macdonald Kanyangale, Angela James, Arlinta Barus, Siegfried Rouvrais, Roger Waldeck, Haraldur Audunsson, Ásrún Matthíasdóttir, Valentina Dagiené, Clara Lemke  <b>150 – Integrating language learning in engineering education: a CDIO approach at ETUT</b> Yslam Orazov, Lachyn Gurdova, Nurjermal Bayramova, Ulugbek Jummanov  <b>149 – Examining architectural design projects through CDIO: preparedness, task design, feedback, and collaboration</b> Geza Fischl, Carlos Saucó	<b>103 – Using CDIO for development of students' sustainability mindset</b> Sin-Moh Cheah, Katerina Yang, Zhengping Liow, Yunyi Wong, Chew-Lin Chia, Erwin Wouterson  <b>154 – Resilience in engineering education: exploring industrial skills towards sustainable synergies</b> Marisol Rico-Cortez, Elvira Kaneberg  <b>156 – Approach to developing key competencies for sustainability in chemical engineering using CDIO</b> Katerina Yang, Sin-Moh Cheah, Yunyi Wong  <b>118 – CDIO peer-to-peer support on education for sustainable development: experience from pilot run</b> Katerina Yang, Sin-Moh Cheah, Divina Gracia D. Ronquillo, Rhonalyn Maulion, Mary Rose F. Persinula, Ai Ye Oh, Juha Kontio  <b>127 – Green growth and CDIO approach in food engineering: initiative and implementation model</b> Thi Viet Ha Phan, Anand Nayyar, Anh-Quang Dao	<b>162 – Using student personas and learner journey mapping for increased inclusivity in teaching</b> Suzanne Brink	<b>Session 4 – CDIO Collaboration and Community</b> Matthew Murphy	<b>Designing the University of the Future – An International Perspective</b> Marcello Sala

2:40pm - 3:00pm Lunch

3:00pm - 6:00pm	Working Group	Free time to explore Melbourne			
	Room 9.53 3:00pm - 4:30pm  Future of CDIO – Working Towards 4.0 Suzanne Brink, Juha Kontio, Reidar Lyng				

6:00pm - 9:00pm **Conference Dinner**  
The Bank on Collins

8:30am Registration Desk Opens

 9:00am - 9:15am **Welcome**  
 Auditorium

 9:15am - 10:00am **Keynote Presentation: Strengthening CDIO**  
 Auditorium **Emeritus Professor James Trevelyan**, Engineer, Educator, Researcher & Entrepreneur

10:00am - 10:20am Morning Tea

10:30am - 12:00pm

6A – Artificial Intelligence and Emerging Technologies

6B – Curriculum

6C – Workshop

 Room 9.41  
 Session Chair: May Lim

 Room 9.42  
 Session Chair: Cesar Ortega-Sanchez

Room 9.43

**189 – Verbal peer feedback in project based learning course: insights from Microsoft Teams meeting recaps**  
 May Lim

**108 – Reflecting on reflections: leveraging student feedback for continuous program development**  
 Svante Gunnarsson, Helena Herbertsson, Anders Ekinge, Malin Wiger, Magdalena Smeds

**168 – Peer-to-peer support: CDIO activity to share and learn**  
 Juha Kontio

**106 – Continual improvement: sense-making of convergence of institutional initiatives on digital technologies**  
 Sin-Moh Cheah, Mark Nivan Singh

**181 – The tyranny of numbers: why marking CDIO activities could be difficult**  
 Cesar Ortega-Sanchez

**115 – Enhancing technicians' knowledge of CDIO through generative AI**  
 Mark Nivan Singh

**133 – Integrating sense lab and project-based learning in lighting design education**  
 Yu-Chan Chao

**185 – Developing an AI expert to support student learning in chemical engineering**  
 Jane Carolyne Hantanto, Aditya Arun Advani, Michael Crocco, Joanne Tanner

**147 – Preparing for the future: aligning engineering competency standards**  
 Zachery Quince, Anna Lidfors Lindqvist, Patcharin Chen

**191 – How effectively are CDIO standards integrated and recognised in the food safety and quality program at the Technical University of Denmark?**  
 Anoop Kumar Sharma

12:00pm - 1:00pm Lunch

1:00pm - 2:40pm

7A – Learning Environments

7B – Workshop

7C – Roundtable Discussions

 Room 9.41  
 Session Chair: Veronica Halupka

Room 9.42

Room 9.43

**134 – Grasping structures: affordable hands-on column buckling activity for first-year engineering students**  
 Marta Gavioli, Giuseppe Radaelli, Renate Klassen, Annoesjka Cabo

**174 – Curriculum agility quick scan of your education**  
 Suzanne Brink, Carl Johan Carlsson, Reidar Lyng

**119 – Experiences in sustainability mindset and education for sustainable development using CDIO**  
 Sin-Moh Cheah, Katerina Yang

**158 – Lipped learning to foster students' self-directed learning: a study of first year students' self-directed learning competencies**  
 Mei Yee Chan, Gavin Bryan Lee, Kian Chee Loh, Helene Leong

**144 – Enhancing learning outcomes by using some electronic technologies**  
 Darkhantsetseg Batsumber, Temuujin Altansukh

**153 – CDIO learning space in digital transformation: a case at Vinh University, Vietnam**  
 Huong Thi Pham, Tien Tran Ba, Yen Hai Hoang Phan, Ai Vinh Le Nguyen

**157 – United by design: modular and flexible learning for undergraduate engineering professional practice**  
 Elizabeth McCarthy, Veronica Halupka, Lila Azouz

2:40pm - 3:00pm Afternoon Tea

3:00pm - 4:30pm

8A – Educational Research and Innovation

8B – Supporting Educators: Strategies for Development, Outreach and Innovation

8C – Roundtable Discussions

8D – CDIO Intro Workshop

 Room 9.41  
 Session Chair: Andrei-Raoul Morariu

 Room 9.42  
 Session Chair: Tony Vo

Room 9.43

Room 9.44

**173 – Examples of enablers for curriculum agility**  
 Suzanne Brink, Carl Johan Carlsson, Mikael Enelund, Sonia M. Gomez Puente, Elizabeth Keller, Reidar Lyng, Charles McCartan, Remon Rooij

**116 – Operationalizing CDIO engineering learning workspaces in East Kazakhstan Technical University**  
 Zhadyra Konurbayeva, Samat Baigerreyev, Kim-Fai Soh, Sin-Moh Cheah

**167 – The future of CDIO**  
 Juha Kontio, Reidar Lyng, Suzanne Brink

**Session 5 – Feedback**
**139 – Defining challenge based learning and education in the autonomous shipping context**  
 Peter Sandell, Johanna Salokannel, Andrei-Raoul Morariu, Anastasia Tsvetkova, Victor Bolbot, Jouni Saarni, Jouni Isoaho, Seppo Virtanen

**113 – Active learning community for professional development: a CDIO standard 10 implementation model**  
 Geok Ling Soo-Ng, Zhengping Lio

**190 – Designing a tool to measure innovation competence perception in engineering students**  
 Ignacio González-Aravena, Gerardo Baro, Horacio Buldrini

**143 – Engineering clean water solutions: a chemical engineering outreach activity for secondary students**  
 Joanne Tanner, Poh Xian Tay

**140 – A challenge based education framework for autonomous shipping**  
 Peter Sandell, Johanna Salokannel, Andrei-Raoul Morariu, Anastasia Tsvetkova, Victor Bolbot, Jouni Isoaho, Jouni Saarni, Seppo Virtanen

**155 – Bridging technical and leadership competencies: integrating CDIO with the SUSI YWLP**  
 Chynar Garlyyeva, Ayna Annayeva, Jennet Mowlamova, Sodgerel Gansukh, Curbangul Sapargeldiyeva, Ayshirin Soltanmyradova, Yslam Orazov

**104 – Learning from deliberate failure: a holistic approach using the CDIO framework**  
 Sin-Moh Cheah, Thijs Willems

8:45am Meet at Woodside Building, 20 Exhibition Walk - Monash University Clayton Campus

9:00am - 10:30am **Campus Tour & CDIO Academy Visit**  
 Monash University Clayton Campus

10:30am - 10:50am Morning Tea

10:30am - 12:00pm Closing Session

Room 1.02 - Woodside Building for Technology and Design, Monash University

CDIO Academic Presentations

Working Group Presentations

Awards Presentations

Closing Ceremony

1:15pm - 2:00pm Lunch

2:00pm - 3:30pm

Room 2.07 - Woodside Building for Technology and Design, Monash University

CDIO Council Meeting

Room 1.02 - Woodside Building for Technology and Design, Monash University  
 2:00pm - 2:45pm

How Digital Engineering Technologies can be used to enhance Engineering:  
 Focus on Augmented Reality (AR) & Internet of Things (IoT) technologies  
 Imran Muthaliph, Leap Australia

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