



The 17th International CDIO Conference (Online) *Re-imagining Engineering Education for the New Normal*

June 21 – June 23, 2021

Chulalongkorn University (CU) &
Rajamangala University of Technology Thanyaburi (RMUTT)
BANGKOK, THAILAND <http://www.cdio2021.chula.ac.th/>

CALL FOR PAPERS

September 2020

The CDIO approach (www.cdio.org) is an innovative educational framework for producing the next generation of engineers. It is a framework for providing students with an education stressing engineering fundamentals set in the context of Conceiving — Designing — Implementing — Operating (CDIO) real-world systems, products and services.

CDIO collaborators recognize that engineering education is acquired through programs of varying lengths and stages in a variety of institutions and that educators in all parts of this spectrum can learn from practise elsewhere. Several times each year, CDIO collaborating institutions, engineering educators and researchers gather to exchange ideas and experiences, review developments, assess and further refine the CDIO approach.

The CDIO Initiative welcomes your ideas and invites proposals for papers, working groups, workshops and roundtables at the 17th International CDIO Conference. The conference will be **fully online** starting on June 21, 2021 until June 23, 2021. Additional information on the conference is available at www.cdio2021.chula.ac.th

The main theme of the conference is **“Re-imagining Engineering Education for the New Normal”**. Proposals for contributions are welcome on topics relevant to the CDIO approach and the conference theme. For Paper contributions, the presentation formats are Podium Presentations and Poster Presentations. Workshops, Working Groups and Roundtable Discussions are contribution categories that do not require a full paper. Please see the sections below for more details about the contribution categories and presentation formats.

Conferences Themes

The possible themes include (but are not limited to):

- Attracting and Supporting Students
- Change Processes, Leadership and Faculty Development
- Cool New Ideas in Engineering Education
- Curriculum and Course Development
- Education for Sustainability, Internationalization
- Engineering Projects & Introduction to Engineering
- Learning Environments – Online and On-site
- Online Modes during Pandemic, and Towards New Normal
- Specific Modes for Teaching/Learning and Assessment



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Submission Categories

Papers: Contributions in this category require a paper that meets the standards set in peer review. Papers are at most 10 pages. Longer manuscripts can also be considered when appropriate; however, the authors are encouraged to write concisely, and the length of the paper must be justified by the substance of the contribution. The review process will follow three phases (see the respective deadlines on page 5):

- 1) submission of an **abstract** not exceeding 500 words;
- 2) submission of a **full** paper following the template and the criteria (see conference website); and
- 3) submission of the **final version** of the paper revised taking reviewer suggestions into account.

Papers submitted by the final deadline are distributed electronically to the attendees of the conference. In addition, the papers accepted to the tracks Engineering Education Research, Advances in CDIO, and CDIO Implementation, as well as the State-of-the-Art papers from the working groups, are archived on the CDIO website (www.cdio.org) and included in the electronic conference proceedings publication.

Workshops, Roundtables and Working groups: Contributions in these categories require an *Activity Description* no longer than two pages, which will be distributed to the conference participants but neither archived nor part of the proceedings. The review process of activity submissions has deadlines that coincide with the Papers category:

- 1) submission of an **outline** not exceeding 500 words; and
- 2) submission of a **two-page activity description** offering greater detail about the plan for participants.

Final submissions must follow a template provided for one of the following three formats.

- **Workshops:** These interactive working sessions will require a detailed plan that meets the standards set by the referees. A workshop may be on a fundamental level that presumes little prior knowledge, or it may be more advanced for experienced participants to gain further knowledge or skills, or a new perspective. The Activity Description must describe a topic and outline the online session, with a considerable active component. Length: **75 minutes**.
- **Roundtable Discussions:** These are informal discussions of a topic proposed by a roundtable facilitator. The goal of a roundtable discussion can be, for example, to generate ideas for a particular problem facing engineering educators or to collaborate on a new advancement within CDIO. The Activity Description should outline the topic and contain discussion questions. Length **45 minutes**.
- **Working Groups:** Working groups are intended to strengthen collaboration within the CDIO community and make progress on specific topics. They are formed by about 5 to 10 participants with a common interest. The group will start working together remotely at least two months prior to the conference. They have a synchronous, online meeting before the conference starts (the week before). They can also continue their work throughout the conference. The working groups make a preliminary report in plenary. Shortly after the conference they submit a State-of-the-Art paper for inclusion in the proceedings (after review by the Program Committee). The Activity Description must outline the topic that the working group will focus on and the activities that they will do before the conference (include the meeting the week before). If accepted, the person(s) submitting the proposal will be the leader(s) of the working group. The leader(s) selects the participants among conference



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delegates who express interest. Each working group member must register for and attend the conference in order to be considered a contributor to the State-of-the-Art paper.

Paper submissions are being accepted in four tracks

Engineering Education Research (EER): This track is for papers that can support the improvement of engineering education while also contributing to the body of knowledge in the field of engineering education. Contributions require a full paper, meeting criteria for *scholarliness* and *usefulness* for improving engineering education, and supporting the goals of the CDIO Initiative. Papers must meet expectations for original scholarly publication, including adequate contextualization in the relevant literature. They are jointly reviewed by engineering education researchers and practitioners (senior CDIO implementers). If the draft paper is “accepted with changes”, the submitted final paper will be reviewed again.

Advances in CDIO: This track is for papers that contribute an advance to the state-of-the-art in the CDIO framework or community, or in CDIO-based education. This may involve an extension or revision of the CDIO framework, comparisons of the CDIO framework with other frameworks, introduction of new CDIO central materials (e.g. revised syllabus, standards, self-evaluation rubrics, etc.). The contributions must meet the expectations for original scholarly publication.

CDIO Implementation: These contributions describe a particular implementation of CDIO principles in a practical setting. They may be case studies of the program-level implementation at a particular institution. They may offer a deep reflection on experiences with courses, projects, instruction and assessment methods, or workspaces. These contributions must be of general interest to the conference participants, be examples of good practices proven through evaluation or critical examinations, and demonstrate awareness of the relevant previous CDIO conference literature. The contributions must meet the expectations for original scholarly publication.

CDIO Projects in Progress: These contributions describe initial development, current activities and preliminary results on projects that may not yet have reached completion. This provides an opportunity for authors to share results with other conference attendees and benefit from timely input. Depending on feedback in the peer-review process, some papers submitted to the other tracks (EER, Advances in CDIO, CDIO Implementation) may be selected by the program committee for presentation in this track. Papers in this track will be distributed electronically to the conference attendees but will **not** be archived on the CDIO website or included in the proceedings.

Note! The author must propose the presentation format during the abstract submission. Papers in all four tracks described above can be presented either as Podium Presentation or Poster Presentation. The presentation format may be changed by the Program Committee as part of the review process.

Please consult the criteria for each track, available on the conference website.



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Session Formats

Podium Presentations: The author prepares a maximum 10-minute pre-recorded presentation. The audience study the pre-recorded presentation prior to joining the parallel session. At the parallel session, the author prepares one slide and makes a 3-minute overview-presentation. The session encourages a discussion among the authors and the audience regarding the session topic synchronously. Due to the nature of scheduling parallel tracks, potential conflicts with other sessions will likely have an effect on the size of the audience.

Poster Presentations: The author prepares a maximum 10-minute pre-recorded presentation. At the poster session, the author prepares one slide and makes a 1-minute pitch. The digital poster (from the pitch) will be shown in a virtual gallery where attendees can leave messages and discuss with authors asynchronously.

Workshop: Workshops are interactive sessions on a specific topic with activities that are intended to engage the participants. Due to the nature of scheduling parallel tracks, potential conflicts with other sessions will likely have an effect on the size of the audience. The workshop can run 1-3 times with different schedule to accommodate attendees from different regions and time zones.

Roundtable Discussion: Informal discussion of a topic proposed by a roundtable facilitator. Discussion time at the conference will be limited to a set period in between other presentation sessions. The participants may decide to continue their collaboration beyond the session.

Working Group: The working group presents its preliminary results to conference attendees at a plenary, and submits a final State-of-the-Art paper shortly after the conference (according to the deadline agreed with the conference organizers). The final paper is reviewed by the program committee and, upon acceptance, published in the proceedings.

Presentation Format of each contribution category	Presentation Format				
	Podium Presentation	Poster Presentation	Workshop	Round table	Working Group
Paper tracks:					
Engineering Education Research (EER)	●	●			
Advances in CDIO	●	●			
CDIO Implementation	●	●			
CDIO Projects in Progress	●	●			
Activities:					
Workshop			●		
Roundtable				●	
Working Group					●

Authors indicate their preferred presentation format during the abstract submission. The Program Committee makes the final decisions on the presentation format to suit the nature of each contribution. Since the goal of the conference is collaboration and sharing of ideas, formats that foster interaction are preferred. The format will be visible in the program.



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Abstract Preparation and Submission

Abstract submissions for Papers and Activity Descriptions for all other categories must be completed on or before November 15, 2020. All submissions are made online: <https://www.softconf.com/l/cdio2021>

The corresponding author will enter the title (max 10 words), authors and affiliations, an abstract limited to 500 words, the suggested conference track and the preferred type of presentation. Please be aware of the additional information available on the conference website: www.cdio2021.chula.ac.th

The submission must follow the formatting requirements detailed in the template on the conference website and must include a Creative Commons License to allow it to be included in the proceedings and/or archived on the CDIO website. Furthermore, at least one of the authors must register by the final submission deadline, participate in the conference and present the contribution. If no author is registered by the deadline (April 15th, 2021), the contribution is considered withdrawn from the program.

Important Dates and Deadlines



* Papers in the EER (Engineering Education Research) track are reviewed again after the submission of the final paper if the draft paper submission was accepted with “minor changes” or “major changes”. The focus of the review is to ensure appropriate development of the manuscript and response to reviewer feedback.



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Submission Guide

Contribution Category	Track	Abstract Requirement	Page Limit	Paper Review	Publication	Presentation Format
Paper	Engineering Education Research (EER)	Maximum 500 word abstract Reviewed by Program Committee	10 pages	Single-Blind Peer Review	Proceedings & CDIO Archive	Podium or Poster
	Advances in CDIO				Electronic Only	
	CDIO Implementation					
	CDIO Projects in Progress					
Activity Description	Workshop	2 pages	Program Committee	Electronic Only	Workshop	
	Roundtable Discussion			Roundtable		
	Working Group			Proceedings & CDIO Archive	Meeting	

General Criteria for Selection

1. Relevance to the conference theme and tracks
2. Novelty of innovative ideas with proven results
3. Potential to stimulate thought and discussion
4. Applicability of ideas, programs, and practices to the CDIO community
5. Compliance with the criteria for the particular submission tracks (see conference website)

Publication Ethics and Malpractice Statement

Contributions that will be published in the CDIO Proceedings are expected to meet the standards set by the referees. The contributions should meet the expectations for original scholarly publication, including adequate review of relevant literature, a hypothesis, results of simulations or measurements, analysis, and conclusions. They may address any area of CDIO, including scholarly examinations of CDIO implementation. The submission must follow the formatting requirements detailed in the template available on the conference website and must include a Creative Commons License to allow it to be included in the proceedings and/or archived on the CDIO website.

The complete Publication Ethics and Publication Malpractice Statement of the CDIO Proceedings and citation rules are available on www.cdio.org.