



14th International CDIO Conference *INNOVATIONS IN ENGINEERING EDUCATION*

June 28 – July 2, 2018

Kanazawa Institute of Technology
Kanazawa, Ishikawa, Japan

CALL FOR PAPERS

September 15, 2017

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

CDIO collaborators recognize that an 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 practice 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 and presentations at the 14th International CDIO Conference. The conference takes place in Kanazawa, Japan on June 28 – July 2, 2018. Additional information on the conference is available at www.kanazawa-it.ac.jp/cdio2018/.

The main theme of the conference is *Innovations in Engineering Education*. Proposals for contributions to the Paper and Extended Abstracts categories are welcome on topics relevant to both the CDIO approach and the conference theme. The available presentation formats for Paper contributions are Podium Presentations and Poster Presentations. The available presentation formats for Extended Abstract contributions are Workshop Presentations and Roundtable Discussions. Please see the sections below for more details about the contribution categories and presentation formats.

Conferences Themes and Tracks

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

- Assessment of Learning Outcomes
- Active Learning
- Collaboration between Academia and Industry
- Collaboration between Universities and High Schools
- Curriculum Design
- Digital Learning and E-Learning
- Educational Development Leadership
- Engineering Workspaces
- Faculty Development
- Globalization / Internationalization
- Kaizen* (Continuous Improvement)
- Learning Environments
- Problem- and Project-Based Learning (PBL)

Paper submissions are being accepted in the following five tracks:

Advances in CDIO: These contributions provide an advance to the state of the art in CDIO-based education. They meet the expectations for original scholarly publication, including adequate review of relevant literature, a hypothesis and/or research setting, results of simulations or measurements, analysis, and conclusions. Abstract submission is required.

CDIO Implementation: These contributions describe a particular implementation of CDIO principles in a practical setting. They may describe experience with a course or project, an instruction method, or introduce new CDIO central materials (e.g. revised syllabus, self-evaluation rubrics, etc.). They may also be case studies of the program-level implementation experience at a particular institution. These contributions must be examples of good practices proven through evaluation (or critical examinations of where it was lacking) and be of general interest to the conference participants. Abstract submission is required.

Engineering Education Research: This track is intended 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. These criteria will be provided separately, either by direct email to the authors of EER abstracts, or published on the conference website. Papers are jointly reviewed by engineering education researchers and practitioners (senior CDIO implementers). Abstract submission is required.

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

CDIO Learning Objects: A paper in the CDIO Learning Objects track is intended to provide a detailed description of a teaching and learning activity (TLA). The paper must include a description of the TLA as well as the resources required to implement it. For instance, if the Learning Object is a design-build project, the following items may be included: information on the degree program and year level, number and size of teams, project requirements, project goals with learning outcomes, required materials along with their approximate costs, and anticipated student achievements. Additional resources such as rubrics, drawings, and instructional materials can be included in separate files as well as links to data sheets and suppliers for relevant components and supplies if not widely available. These paper contributions will be distributed on the conference USB drive, but will not be archived on the CDIO website or included in the proceedings publication. Abstract submission is required.

Contribution Categories

Papers: Contributions in this category require a paper that meets the standards set by the referees and is at most 10 pages in length. 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, each with respective deadlines:

- 1) submission of an abstract not exceeding 500 words;
- 2) submission of a full-length paper following the template; and
- 3) submission of the final version of the paper revised according to comments from the referees.

Papers accepted and submitted by the final deadline will be distributed on the conference USB drive. In addition, the papers accepted to the Advances in CDIO, CDIO Implementation, and Engineering Education Research categories will be archived on the CDIO website (www.cdio.org) and included in the electronic conference proceedings publication.

Extended Abstracts: Contributions in the form of extended abstracts are no longer than two pages and will be distributed to the conference participants on the conference USB drive but not archived. There are two phases to the review process of all Extended Abstracts submissions with deadlines that coincide with the Papers category:

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

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

- **Workshop Topics:** These interactive working sessions on various topics will require a detailed plan that meets the standards set by the referees. A workshop may be at a basic level that presumes little prior knowledge of the topic or skills, or it may be more advanced for experienced participants to gain further knowledge or a new perspective on the topic or skills. Workshop proposals must account for the predetermined time limits set by the program committee.
- **Roundtable Discussion Topics:** These informal discussions of a topic are 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 extended abstract containing discussion questions will be distributed to participants on the conference USB drive.

Presentation Formats

Podium Presentations: These presentations will follow a traditional conference format of multiple, parallel tracks with short presentations followed by Q&A. However, the discussion will be facilitated by an interactive phase concluding each session (additional information will be provided later). 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: These presentations will require a short one-minute 'teaser' presentation by an author of each poster and will be performed in front of the entire conference audience without conflict. Following the teaser session, posters provided by the authors will be on display in a central area where authors can discuss the work with interested attendees. This session will also be scheduled with no conflicts. Poster presentations will be scheduled early in the conference to facilitate further interaction.

Workshop Presentations: Workshops are interactive sessions on a specific topic with activities that are intended to engage the participants. A short contribution will outline the objectives for skills development and any requirements for prior knowledge of the topic or skills. Due to the nature of scheduling parallel tracks, potential conflicts with other sessions will likely have an effect on the size of the audience.

Roundtable Discussions: Informal discussion of a topic proposed by a roundtable facilitator. A short contribution will provide the background and discussion questions. Discussion time at the conference will be limited to a set period in between other presentation sessions. The participants may of course decide to form a working group and carry their collaboration beyond the context of the conference.

The program committee will make the final decision on the presentation type for a contribution with consideration for the nature of a contribution as well as the author’s preference.

Abstract Preparation and Submission

All submissions will be performed through an Internet-based submission system. Abstract submissions for all categories must be completed on or before November 15, 2017. Link to the submission system: www.softconf.com/i/cdio2018/

The corresponding author will enter the title, 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.kanazawa-it.ac.jp/cdio2018/

The final 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 web site. 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, the contribution will be withdrawn from the program.

Important Dates and Deadlines

The following deadlines apply for the authors:

Call for Papers & abstract submission open	September 15, 2017
Abstract submission deadline (All Categories)	November 15, 2017
Notification of abstract acceptance	December 1, 2017
Draft paper submission deadline (Papers).....	January 30, 2018
Extended abstract deadline (Workshops / Roundtables)	January 30, 2018
Notification of (draft) paper acceptance (Papers)	March 5, 2018
Notification of acceptance (Workshops / Roundtables).....	March 5, 2018
Early registration deadline.....	March 31, 2018
Final submission deadline (All Categories)	April 30, 2018
Author registration deadline (All Categories)	April 30, 2018
CDIO 2018 Conference.....	June 28 – July 2, 2018

NOTE: The first abstract deadline applies to all tracks and categories.

Submission Guide

Contribution Category	Track	Abstract Requirement	Abstract Review	Paper Limit & Template Style	Paper Review	Copyright	Publication	Presentation Format
Papers	Advances in CDIO	500-word abstract (no template)	Program Committee	10 pages Template A	Single-Blind Peer Review	Creative Commons	USB Drive, Proceedings & CDIO Archive	Podium or Poster
	CDIO Implementation							
	Engineering Education Research			2 pages Templates C/D				
	CDIO Projects in Progress						Program Committee	
Extended Abstracts	CDIO Learning Objects	USB Only	Workshop					
	Workshop			Roundtable				
	Roundtable Discussion							

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 audience