



15th International CDIO Conference *CHANGE in ENGINEERING EDUCATION*

June 25 – June 28, 2019

Aarhus University

Aarhus, Denmark

CALL FOR PAPERS

September 3, 2018

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, posters, workgroups, workshops and roundtables at the 15th International CDIO Conference. The conference takes place in Aarhus, Denmark on June 24 (afternoon) – June 28, 2019. Additional information on the conference is available at www.cdio2019.org

The main theme of the conference is *CHANGE* 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):

- Active Learning
- Assessment
- Attracting and supporting new students
- Change Management
- Continuous Improvement of Education
- Cool new Ideas in Engineering Education
- Curriculum Design
- Digital Learning, Blended Learning and E-Learning
- Educational Development Leadership
- Engineering Workspaces
- Faculty Development
- Globalization / Internationalization
- Learning Environments
- Learning Approaches in Engineering Context (e.g. PBL, collaborative learning, enquiry based learning)
- Relationship between Academia and Industry

Paper submissions are being accepted in the following four tracks:

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), be of general interest to the conference participants and the author(s) should be aware of the previous CDIO conferences focusing on the same topic. Abstract submission is required.

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 (with references to relevant papers from previous CDIO conferences), a hypothesis and/or research setting, results of experiment, analysis, and conclusions. Abstract submission is required.

Engineering Education Research (EER): 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 on the conference website. Papers are jointly reviewed by engineering education researchers and practitioners (senior CDIO implementers). Abstract submission is required. Engineering Education Research papers will additionally be reviewed after the submission of the final paper if the paper is evaluated as “accept with minor changes” or “accept with major changes”.

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 electronically to the attendees of the conference, 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 electronically to the attendees of the conference. In addition, the papers accepted to the Advances in CDIO, CDIO Implementation, Engineering Education Research tracks as well as the papers from the working groups 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 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 three 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.
- **Working Group Topics:** Working groups are formed by participants with a common interest in a topic related to the subject matter of the conference. The groups of 5 to about 10 participants work together electronically before the start of the conference. Working groups convene on the Sunday evening before the conference, and start face-to-face work in their sessions the following day (Monday). Group members are expected to work together for the whole of Monday. They are encouraged to continue their work throughout the conference, which runs from Tuesday to Thursday when they find it possible. . The working group start working digitally together at least two months prior to the conference.

Working groups is a way to foster collaboration between CDIO members on a specific topic of their interest. The extended abstract must describe the topic that the working group will focus upon and ideas for activities that the working group members will do before meeting face-to-face. If accepted, the person(s) submitting the working group proposal will be the leader(s) of the working group. The leader(s) selects the participants among the conference delegates who have signed up to be a member.

Every working group member must register for and be present at the conference in order to be considered a contributor to the final state of the art paper. The working group present its preliminary results to conference attendees at a special working group presentation session, and submit a final state of the art paper after the conference concludes (deadline to be jointly set with the conference

organizers). Final state of the art papers are reviewed by the program committee and, if accepted, published in the digital conference proceedings.

- **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 electronically.

Presentation Formats

Podium Presentations (P²): These presentations will follow a traditional conference format of multiple, parallel tracks with short presentations followed by Q&A. The discussion will be facilitated by an interactive phase concluding each session. Due to the nature of scheduling parallel tracks, potential conflicts with other sessions will likely have an effect on the size of the audience.

Podium Poster Presentations (P³): These presentations starts with a short one-minute podium ‘teaser’ 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: Workshops are interactive sessions on a specific topic with activities that are intended to engage the participants. The written proposal must outline the objectives 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. There will be a short one-minute podium ‘teaser’ in front of the entire conference audience without conflict.

The program committee will make the final decision on the presentation type for a contribution with consideration for the nature of a contribution. Authors will be asked (when submitting) to indicate their preferred format. The goal of the conference is collaboration and sharing of ideas, therefore formats that foster interaction is preferred. The final format will visible in the program.

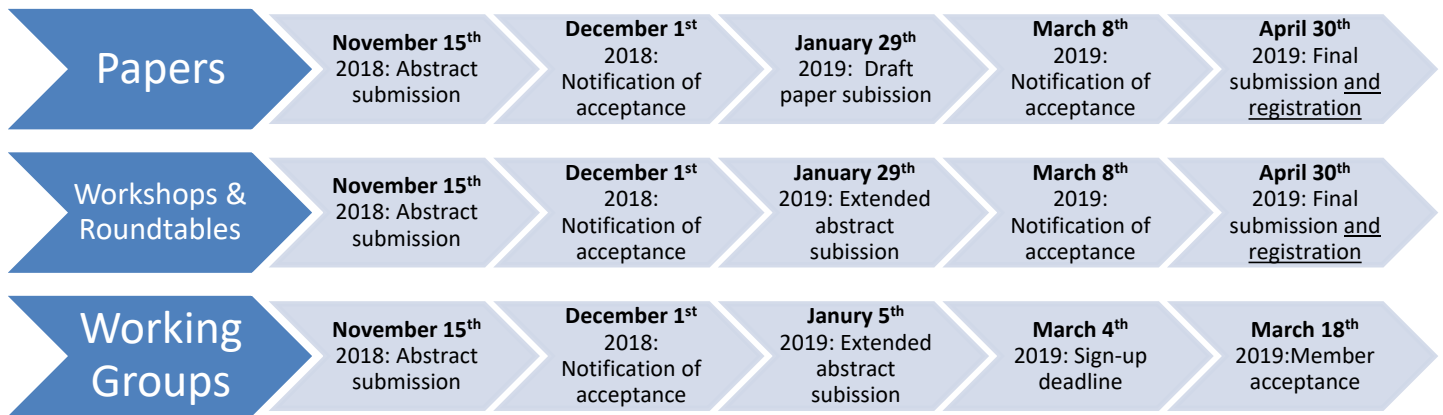
Abstract Preparation and Submission

All submissions will be performed through an Internet-based submission system. Abstract submissions for all categories must be completed on or before November 15, 2018. Link to the submission system: www.softconf.com/i/cdio2019/

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.cdio2019.org

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 (April 30th 2019), the contribution will be withdrawn from the program.

Important Dates and Deadlines



SPECIAL for EER papers: Engineering Education Research papers will additionally be reviewed after the submission of the final paper if the draft paper submission was evaluated as “accept with minor changes” or “accept with major changes”. The focus of the review is to ensure that the comments from the reviewer have been considered.

Submission Guide

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

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
5. Compliance with the criteria for the particular submission