2025 IEEE University of Leicester Student Branch Circuit Design Contest (CDC'25) Guidelines

Organised by:
IEEE University of Leicester Student Branch
IEEE PELS University of Leicester Student Branch Chapter
Circuit Design Contest Executive Committee (CDCEC)

In consultation with:
Dr. Bing Ji, IEEE University of Leicester Student Branch Counsellor
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Co-sponsored by:
IEEE UK and Ireland Section Power Electronics Society
IEEE UK and Ireland Section Industry Application Society
IEEE UK and Ireland Section Woman-in-Engineering Affinity Group
IEEE UK and Ireland Section
IEEE Region 8

Industrial sponsors: EasyEDA

Key Dates:
Official Launch: 01/Apr/2025
Registration Deadline: 14/May/2025
Preliminary Review Submission Deadline: 15/May/2025
Final Submission Deadline: 04/July/2025
Final Judging and Awards: 15/July/2025

Contact Information:
For queries or support, please contact:
Mr. Chen Yao on behalf of CDCEC
Chair of IEEE University of Leicester Student Branch

Terms and Conditions:
CDCEC reserves the sole and exclusive right of final interpretation and decision-making authority regarding all aspects of the competition. All participants acknowledge and accept this condition upon entry.

Overview of the Contest

IEEE University of Leicester Student Branch Circuit Design Contest 2025 is an international competition that transcends academic boundaries. Organised by the IEEE University of Leicester Student Branch through its Circuit Design Contest Executive Committee (CDCEC), this event offers a unique platform for innovation and collaboration.

Inspired by cutting-edge research, the contest invites participants from around the world to collaborate and compete in solving real-world engineering challenges. You'll have the opportunity to apply your knowledge in electronics, embedded systems, and circuit design in a dynamic, hands-on environment.

Whether you're an undergraduate or postgraduate student, this is your chance to demonstrate your skills, gain valuable experience, and expand your global professional network in the field of electrical and electronic engineering.

Contest Prize

- First Prize: **£150** + IEEE Certificate+ Mysterious Intelligent Gift
- Second Prize: **£50** + IEEE Certificate+ Mysterious Intelligent Gift
- Industry Award: **£50** + IEEE Certificate+ Mysterious Intelligent Gift
- Best Innovation Award: **£50** + IEEE Certificate + Mysterious Intelligent Gift
- *Woman-in-Electronics (WiE) Award: **£50** + IEEE Certificate + Mysterious Intelligent Gift
- **PowerLeicester Award: £50 + IEEE Certificate+ Mysterious Intelligent Gift

Note:
*Open to female individuals who have actively participated in the contest and demonstrated notable technical contributions, leadership, or impact. Applicants must be IEEE Student Members at the time of submission.
**Provided by IEEE PELS, this prize requires that at least 51% of the team members be IEEE PELS graduate members or PELS student members.

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Eligibility Criteria

1. **Affiliation**:

Open to all active **undergraduate (UG)** and **postgraduate (PG)** students from the named schools/institutes from both universities including University of Leicester (UK) and Leicester International Institute (China), who are enrolled during the 2024–2025 academic year and are affiliated to the following schools:

1. University of Leicester: School of Engineering
2. Leicester International Institute: Dalian Leicester Institute

2. **IEEE Membership**:

50% of the team members must be **current IEEE Student Members or Graduate Members**.

The **team leader (main author)** must be an IEEE Student Member affiliated with their university's IEEE Student Branch.

3. **Cross-Institutional Requirement**:

Each team must include **at least two members from different campuses** (e.g., one from Leicester, and one from DLI).

4. **Team Composition and Gender Balance**:

Teams must consist of **2 to 4 students, each participant can join at most one team.**

Each team must have **no more than one** senior student (e.g. postgraduate) as the mentor and/or team member.

To promote gender diversity in team formation, each team will have **at least one** female student (ug or pg).

After the team formation is completed and the team information registration has been submitted, the participating team member cannot be changed at will.

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Team formation method

Participants can contact other eligible students on their own to form teams, fill registration form (provided by the official) and send it to the regional principal's email (See the appendix at the end of this guidance).

Participant can **search for teammates through official website** of the IEEE Student Branch (there is a **social module in the event unit on the website**), post a thread in the "social module". The content of the thread should include personal experiences, contact information, personal advantages, etc. The UOL IEEE Student Branch website:www.uolieee.org

Participants can also **fill out the participant statistical form released by IEEE SB**. In the form, fill in a series of personal introductions (including basic information, contact details, personal advantages, etc.). The CDCEC organization will contact and assist in team formation.

Contest Rules

1. **Project Scope**:

• The contest focuses on **circuit design**, including (but not limited to) analog, digital, mixed-signal, embedded systems, and system-level solutions (e.g. sensors, power electronics).

• Designs may incorporate microcontrollers, sensors, wireless modules, power electronics, etc.

• EDA Tool: EasyEDA (mandatory for PCB design; free download: EasyEDA)

2. **Design Requirement**:

• Teams must present a **working prototype** or **verified simulation** with clear documentation.

• All submissions must be **original**, student-developed, and not reused from other competitions or commercial projects.

• The overall budget for each design project must be **less than $200.**

• The official EDA tool for PCB design is EasyEDA, which support remote team work and can be either assessed online or downloaded for free. EasyEDA website: https://easyeda.com/

3. **Open-Source Principle**:

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• All accepted projects must submit and publish their design materials (schematics, PCB layouts, code, documentation) as **open-source** for educational use.

4.**Registration Submission Materials:**

A **PDF** file (the template is provided by CDCEC) containing a team introduction, including **Team Name**, **Personnel Introduction** and **Allocation of Duties**.

5.**Preliminary Review Submission Materials:**

• A **proposal including:**

- **Complete plan**, **Functional description**,
- **Introduction of breakthrough points (innovative features)**,
- **Model and quantity of required accessories,**
- **Cost calculation,**
- **Current progress report,**
- **Reference.**

6. **Final submission Materials** (for shortlisted teams):

• 100-word abstract

• Block diagram, schematics, PCB layout (if applicable, and EasyEDA is the official designated software for this contest)

• 2–4 page technical report (The provided official report template with the brand logos of EasyEDA and IEEE should be used.)

• 3-minute demo video (The project demonstration video must incorporate the brand logos of EasyEDA and IEEE.)

• Prototype, measurement results or simulation outputs with clear documentation.

• Source code and project files in a shared repository

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Season Structure

The contest will be conducted in **three phases**:

Phase 1: Registration Opens (7th April- 14th May, 2025)

- **Objective**: Build awareness and mobilize participation.
- **Activities:**
  - Design and distribute promotional posters across campus labs, hostels, and common areas.
  - Organize offline introduction meetings within the campus area and hold regular public competition guidance sessions (Please pay attention to the subsequent notice for information such as the location).
  - Promote the competition through the official website or APP of the IEEE Student Branch.
  - Participants form teams and register for the competition.
  - Before May 15th, all participating teams need to complete the registration and send the registration form through emails (the subject title of your email should be Hardware Contest Information of Participating Team) to the email address: cy118@student.le.ac.uk .

Phase 2: Problem Statement Release & Preliminary Review & Final preparation (15th May - 4th July 2025)

- **Objective**: Problem statement will release on 14th May and CDCEC evaluate technical feasibility and innovation preliminarily.
- **Activities:**
  - Coordinate with the central committee to collect and pre-screen submissions, CDCEC will notify the teams that have passed the preliminary review.
  - The participating teams that have passed the preliminary review need to prepare for the final presentation.
  - The deadline for submission during the **Preliminary Review Stage** is 15th May. At this stage, we will conduct a preliminary scoring for the entries. The specific criteria for evaluation are as follows: **Innovation**: 35 points; **Functionality**: 45 points; **Cost**: 15 points; **Progress**: 15 points.

- For teams that were not selected during the preliminary review, the IEEE Student Branch can offer a reimbursement of up to £50 to help cover eligible expenses incurred.
- Materials to be submitted during the **Preliminary Review** stage: A **proposal** (The template is provided by CDCEC. Please pay attention to the UOL IEEE SB Website.), which is incorporating the following seven items:
  - **Complete plan**,
  - **Functional description**,
  - **Introduction of breakthrough points (innovative features)**,
  - **Model and quantity of required accessories,**
  - **Cost calculation,**
  - **Current progress report,**
  - **Reference.**

Phase 3: Finals Presentation & Award Ceremony (15th July 2025)

- **Objective**: Showcase design excellence and announcement of winners.
- **Participation**:
  - Finalists will present their prototypes at the **global finals** in University of Leicester.
  - Award certificates and prizes to all winners.
  - Teams that have passed the preliminary review and successfully completed the contest, will be eligible to receive a reimbursement of up to £200 from the IEEE Student Branch to support their project expenses.

The contest will be publicly displayed in the **EVENT** section of the **UOL IEEE Student Branch Website.** CDCEC will keep track of the event content in real time on this website and send emails to the participants

Once more, we have a strong inclination to show our genuine gratitude to sponsors like **EasyEDA** for their robust support of the contest.

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Appendix

Event websites

University of Leicester IEEE Student Branch website: https: //www.uolieee.org/

EasyEDA website: https://easyeda.com/

EasyEDA Video tutorial:
https://youtube.com/playlist?list=PLbKMtvtYbdPPUywy5XyfPVcFcH8Eho_hS&si=Cx9CaJWhKjRd8pV7

EasyEDA Tutorial page:

https://prodocs.easyeda.com/en/

Contact Information

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