



Circuit Design Battle: Official Rule Book

This competition is open to all university students.

1) General Rules:

- Each participating team may consist of upto 3 members.
- If the students from different Institutes/Universities want to join hands and form a team in collaboration, they can do so.
- Participants are expected to bring their own laptops with the necessary simulation software pre-installed.
- No team member will be added further once the registration is done.
- If you want to register for the competition you must need to fill the form on website.
- Disqualification will be made on the spot, if any of the team members are found arguing (using slang/physical contact) with the organizing team or the member of another team.
- Organizing team have the right to amend the competition rules/duration at any time.
- The panel of judges for each competition will be comprised of members from the relevant fields and past experiences in competitions.
- The decision of judges will be final.
- If you win a competition, we will notify you at the end of the whole event.
- The prize will not be transferable to another team.
- No part of a prize is exchangeable for cash or any other prize.
- Incorrectly completed entries will be disqualified.

2) Game Rules:

In this circuit design competition participants will simulate circuits using the allowed software. They will be judged based on the accuracy, efficiency, and innovation of their designs, as well as their ability to meet the given specifications.

- Each round will be a maximum of 1 hour.
- A task will be provided at the start of the competition that must be completed within the given time.
- The task will involve designing a circuit that must meet certain specifications.
- The software allowed to use are Multisim, LTspice, Proteus, Circuit Lab and TinkerCAD.
- The circuit must be simulated, and the results (such as waveforms, frequency response, or voltage levels) must be saved and submitted.
- The file names should follow the format provided by the organizers (e.g., TeamName_TaskName).



- The team with the highest total score (out of 100 points) based on the scoring criteria defined below will be declared the winner.
- There will be a penalty of -10 points for every 5 minutes after the deadline.

Points Allocation Chart:

Design Accuracy	50
Simulation Results	15
Innovation	15
Efficiency	20
Total	100

3) Topics for Preparation:

Participants are encouraged to prepare and review the following topics in advance of the competition:

a) Analog Circuit Design

- Operational Amplifier circuits (inverting, non-inverting, integrators, differentiators)
- Filter design (low-pass, high-pass, band-pass, notch)
- Oscillators (Wien bridge)
- Amplifier configurations (BJT, FET)

b) Mixed-Signal Circuit Design

- Analog-to-Digital Converters (ADC) and Digital-to-Analog Converters (DAC)

c) Power Electronics

- Power supply design (voltage regulation)

4) Important Dates

- **Competition Dates:** October 12-13, 2024

4) Collaborative Partner

This competition will be hosted in collaboration with Robo Automators.

5) Contact Information

For any questions or additional information, please contact us at:

- **Email:** contact@teknofestpakistan.com
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