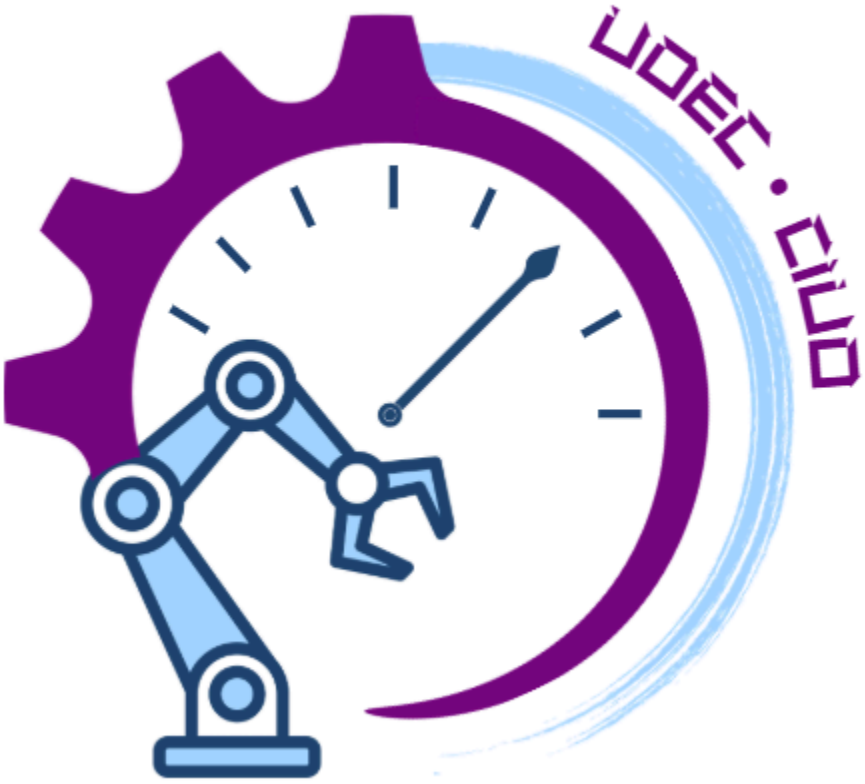


university of OTTAWA

ENGINEERING COMPETITION

Re-Engineering Competition 2026

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This document outlines requirements and expectations for competitors in the Re-Engineering category at uOEC 2026. Please read this document carefully and in full.

Overview

The objective of the Re-Engineering category is to take an existing engineering concept, product, technique, or technology and incrementally improve on its design to suit an alternate situation or application. In this competition, students will be required to apply the re-engineering process to an existing gadget or mechanism in order to add new functionality to it or enhance its original functionality. The intent of these improvements will be to extend the use of the device to an alternative situation or use case.

Scenario

After the time dilation caused by time travel, you return home, but you don't know if your food has expired or not. Your fridge is not smart and doesn't track when you bought and stored the food in it. You think to yourself about how risky it is to eat the food and end up wasting money on takeout instead. You and your crew decide now is the time for a change and plan to re-engineer the fridge so this never happens again.

Objective

Using the manual provided in the references section, teams must re-engineer the provided refrigerator to add a module, feature, or system that improves how food is tracked and managed. The fridge must be the sole component being improved. Teams are free to decide how they should tackle this problem as long as the solution is built around re-engineering the fridge. Meaning teams can add external components/modules to the fridge, as long as the fridge remains the focus of the re-engineering. Teams should select and justify each component based on its cost, functionality, and efficiency.
The goal is to come up with a complete real-world solution of how the fridge could be re-engineered to make our lives more organized. Teams must address economic, environmental, social, and quality implications of the design. Come up with a cost estimate for the components that will be used to re-engineering the fridge.

Rules and Constraints

- Internet use is permitted during the competition for research and preparation.
- Components of the refrigerator model can be physically modified by cutting, soldering, rewiring, or reprogramming any components.

Constraints:

- The Re-Engineering team will be comprised of a maximum of two (2) competitors.
- The refrigerator must remain the core focus of the redesign.

- Teams can add external components/modules to the fridge, as long as the fridge remains the focus of the re-engineering.

Deliverables

a. Report of one (1) page (excluding appendices)

i. Teams must address economic, environmental, social, and quality implications of the design.

ii. Come up with a cost estimate for the components that will be used to re-engineering the fridge.

b. Presentation.

- Team's report and presentation meet all stated submission requirements
- Pay attention to the rubric for where more of the points will be spread.
- It is necessary to consider economic, environmental, social, efficiency and quality implications.
- The winning solution will not necessarily be the most technically effective solution, but the solution that has the most real-world applicability and forethought.
- The final design should be summarized in a one-page report along with a 7-minute-long presentation.
- Teams are prototyping a conceptual design idea of their re-engineered fridge.
- The oral presentation should summarize the technical and economic analysis and demonstrate the design to the judges.

Judging and Scoring

For your reference, the judging matrix is provided below.

Solution	Addresses Problem Statement Design Feasibility Environmental, Social, and Economic Analysis Risk Analysis	/60
Report	Clarity Writing Style and Professionalism Deliverable Compliance with Expectations	/15
Presentation	Voice Articulation and Timing Visual Aids Response to Questions	/ 25
Penalties	Plagiarism Insufficient Citation Documents Received After Deadline Absent Team Member	-50 -50 -50 -25
Total		/ 100

Remember to familiarize yourself with the rulebook for more details on what is expected, and reach out to the VP Internal for any questions.

Durations:

- Design: 8:30 am to 2:30 pm, paused 12:00 to 1:00 pm for lunch. Report and presentation due 2:30 pm.
- Presentations: from 2:30 pm; seven (7) minute presentation, three (3) minute question period

Resources

- Kenmore Top Mount Refrigerator
- The manual is not the only source of information teams should use for the refrigerator and its components. If more information is required feel free to search the internet.
    - Teams can use external sources to find component pricing/specifications.