

CBL/CBR Case Study Template for campusengage.ie

Community-based learning and research are academic approaches that seeks to engage and accredit students, within the curriculum, for working in partnership with civic and civil society organisations (CSOs) to act on local societal challenges.

Health and Wellbeing

Project Title: 5E3 Electronic **Engineering Project**

Brief overview of project: (60 max)

5E3 is a project-based module, where teams of students work, within a user-centred design framework, to conceptualize and manufacture a high quality prototype to real-world problem. Each team will work to a specific project brief from a project sponsor – typically a business with global scale. Project briefs will be significantly open-ended to facilitate truly innovative solutions to be developed. Students will work with an academic mentor/supervisor, teaching assistants and a project liaison in the sponsor company. Some of the projects will require liaison with project teams in other universities working on other aspects of the problem. Students will be expected to deliver a working prototype solution of commercial quality at the conclusion of the project.

Community Partner(s):

Each year, Trinity’s teams work on a diverse portfolio of projects with international partners that provide innovative solutions to the needs of different industries, across both the for-profit and not-for-profit sectors. This year’s sponsors included a large multinational software company, an Irish SME that makes agricultural machinery, and not-for-profit charities in the healthcare sector.

Faculty: Electrical Engineering, Faculty of Engineering, Mathematics, and Science

Brief outline on community-based learning/research activity (800 words max)

One of this year’s teams addressed the challenge of helping people with intellectual disability better integrate into society. Working with their end users, the team discovered that navigation and way-finding present significant challenges for people with intellectual disability, and for their carers. Their solution comprised a smartphone app connected to a smart-watch, which gave simple, easy-to-follow directions through the smart-watch and, optionally, through earphones to the user. The carers’ app meanwhile received live updates on the position of the user and their destination, and also monitored their heartrate, which was important in detecting anxiety.

Student learning outcomes:
please list and detail the various learning outcomes e.g. effective communication, high level cognitive, intercultural, leadership, entrepreneurial agility, analytical and interpersonal skills, (set out in Ireland’s National Skills Strategy 2025).

On successful completion of the module, students will be able to:

- Work in in multidisciplinary teams on a technically ambitious and challenging project.
- Identify user needs and develop solution concepts to meet those needs.
- Analyse potential market and societal benefits of developed solutions.
- Conduct patent searches and analyse prior intellectual property.
- Liaise with professional engineers and other staff in the commercial sector in a professional and timely manner.

	<ul style="list-style-type: none"> • Pitch design concepts at an advanced level, utilising prototypes and multi-media tools.
Community outcomes (Aims and Objectives): 800 word max	Prototypes and plans that address solutions to day-to-day challenges that they have identified.
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High quality photo/ logo from project:	