Challenge Based Innovation (CBI)
A project based course where multidisciplinary teams tackle challenges facing the society and search for novel applications for technologies developed at CERN.
Challenge based innovation @ CERN
CERN spin-offs: www, medical imaging, high efficiency solar panels
Challenge based innovation @ CERN IdeaSquare
Methodology: Design Thinking approach

1.- Needfinding (discover)
2.- Ideation (Solution design)
3.- Implementation, proof of concept (deliver)
Aided movement A skirt with a system that helps women with osteoporosis to reduce the hip’s bones break in case of falling.
• Creating a literate world: How might we significantly reduce child and youth illiteracy at scale in developing countries with the use of technology?

• Water safety: How might we improve public health by providing safe access to water?

• European labour mobility: How might we increase labour mobility within EU by supporting the workers with useful and actionable information, drawn from big data?

• Food safety in home delivery: How might we home deliver food in a new way that maintains the food at a selected temperature, ensuring its safety?
• Water safety: Well2Go. 78% of wells not fully working
  - sensor + sms-based network to identify failing wells
  - platform to manage and finance wells repairing
Challenges / CBI 16-17

- Return to Working Life After a Traffic Accident
- Learning Environment of the Future
- Integration of People with Intellectual and Developmental Disabilities into Society
- Better Shelter 2.0. Improvement of quality of life of people at refugee camps
- Smart Maintenance for Industry 4.0

- Disruptive solutions
- Solutions biased towards ICT
Challenges / CBI 16-17

- Better Shelter 2.0. Improvement of quality of life of people at refugee camps:
  - ElecTree, smart energy distribution for shelters
PROPOSAL FOR CBI 2017

Challenge Based Innovation for the Sustainable Development Goals (SDGs)
Multidisciplinary teams, students from ESADE, UPC, IED.
Understand

Understand ends in insights

Empathy

Create

Create ends in ideas

Define

Deliver

Delivery ends in reality

Ideate

Prototype

Test

September

CERN intensive week 11.-15.9.

October

CERN intensive week 23.-27/10.

November

CERN intensive weeks 06.-15/12.

Dec.

Intensive kick-off week in BCN 4.-7/9.

Preliminary Schedule

4/9 Weekly teamwork & CBI-day 15/12
KEY DETAILS

**Capacity** 10 participants from UPC (ETSETB (Degree + Master ) + FIB)

**Credits**
12 ECTS Credits in the Degrees. Alternate of PAE
10 ECTS Credits in the Masters. Alternate of MTP + 1 elective

**Costs covered by UPC**
- accommodation, academic materials, prototyping

**Costs covered by students**
- Travel costs, meals

Image: Team Penrose, 2015
The home universities provide local teaching and weekly coaching sessions. During the periods developed at CERN, IdeaSquare will support the teaching team.

Local teaching & coaching includes sessions from three disciplines:

**Business:** ESADE  
**Design:** IED  
**Engineering:** UPC
Students’ profile

Distributed teams with students from

BARCELONA (~30 students)
  . ESADE Business School (10 students)
  . Istituto Europeo di Design (IED) (8-10 students)
  . Universitat Politècnica de Catalunya (UPC) (10 students)

Thank you for your interest! We will be waiting for your applications!

E-mail to  fib.vd.iirr@upc.edu  before June 5, 2017