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?

See: http://www.cbi-course.com/
• Creating a literate world: Bam-Boo
  - Knowledge kiosk + interactive contents
  - Use of free time + community building
• Water safety: Well2Go.  78% of wells not fully working
- sensor + sms-based network to identify failing wells
- platform to manage and finance wells repairing
European labour mobility: GlobHub

- Platform to match job seekers and employers at European level using advanced algorithms
Challenge examples / CBI 16-17 / CBI 17-18

- 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
- Immersive Technologies for Training Activities on Emergency Sanitary Missions
- Operational Methods for Radiation inspection

  - 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
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**

#### Preliminary Schedule

<table>
<thead>
<tr>
<th>September</th>
<th>October</th>
<th>November</th>
<th>Dec.</th>
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</thead>
<tbody>
<tr>
<td><strong>Intensive</strong></td>
<td><strong>CERN</strong></td>
<td><strong>CERN intensive week (3 days)</strong></td>
<td><strong>CERN intensive weeks</strong></td>
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<tr>
<td>kick-off week in BCN 3.-7/9.</td>
<td>intensive week 17.-19.9.</td>
<td>29/10.-2/11.</td>
<td>05.-14/12.</td>
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**Weekly teamwork & CBI-day**

3/9 → 14/12
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
Teaching

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) (10 students)
  . Universitat Politècnica de Catalunya (UPC) (10 students)

Thank you for your interest! We will be waiting for your applications! E-mail to ramon.bragos@upc.edu before June 24, 2018