Open Biomedical Engineering e-Platform for Innovation through Education

Youth Innovators Competition and Design Bootcamp 2020

Preliminary programme

School at a glance

The bootcamp will run over two weeks, from Monday to Friday.

During the school, students will have the opportunity to listen to outstanding keynotes, follow classes and workshops on Device Design, and will work in group on a medical device project to solve one of the following challenges related to COVID-19:

1. Enhance medical devices and personal protection gear design and fabrication
2. Alternative tools for efficient and effective contact tracing and isolation
3. New approaches for testing and diagnosis
4. Reliable and cost-effective medical devices for therapy

Bootcamp competition

During the Bootcamp, participants will:

- Identify the device and its specification/standards (Day 1 and Day 2)
- Design (conceptual design Day 3-5, more complex design up to Day 9)
- Plan sustainability (Day 7– Day 8)
- Document (on UBORA, everyday)
- Present (intermediate and final presentation)

Each group will have mentors from Hospitals, Academia, Industry, Civil Society.

We will evaluate the best project in terms of

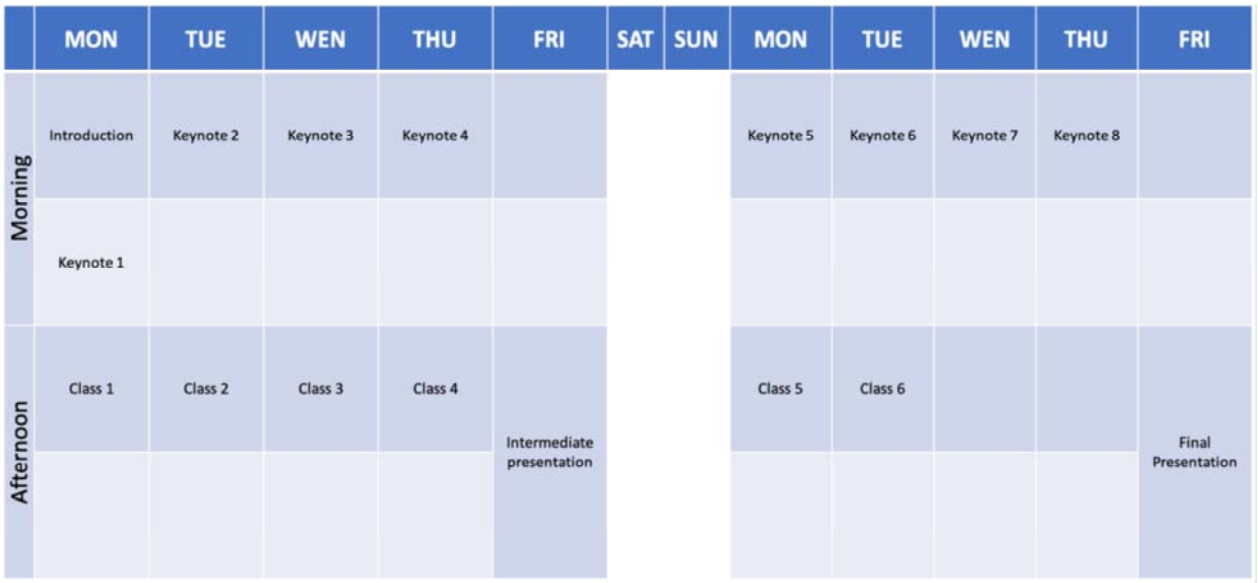
- technical implementation,
- documentation,
- presentation,
- impact

The best photo/video representing the Bootcamp activities will be awarded

Organization of the two weeks

The school will offer :

- **Keynotes** (30 minutes)
- **Classes** (30 minutes theory, 30 minutes use cases)
- **Workshops** (15 minutes background, 45 minutes exercise/use case)
- virtual rooms for:
  - group meetings
  - daily meeting with mentors



	MON	TUE	WEN	THU	FRI	SAT	SUN	MON	TUE	WEN	THU	FRI
Morning	Introduction	Keynote 2	Keynote 3	Keynote 4				Keynote 5	Keynote 6	Keynote 7	Keynote 8	
	Keynote 1											
Afternoon	Class 1	Class 2	Class 3	Class 4	Intermediate presentation			Class 5	Class 6			Final Presentation

Keynotes

Inspiring presentations from outstanding speakers:

- Epidemiology
- Medical Devices Legislation across Africa
- Artificial intelligence
- Robotics
- Frugal Innovation
- Prosthesis and Bionics
- In vitro organs
- Nanomaterials
- Renewable resources
- Circular Economy

Classes

Frontal lessons, necessary for developing the project (30 min. theory, 30 min. use case)

- Use of UBORA and some cases of study
- Safety and regulations
- Software as a medical device
- Needs Identification
- Creativity promotion
- Project management
- Business models
- Reverse innovation
- Biocompatibility

- Risk assessment

Webinars

Technical talks on the use of specific software (15 min. background, 45 min. exercise/use case):

- Basic CAD modelling
- Mobile apps programming
- Microcontroller programming
- FEM simulation
- Machine learning

Support

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REPUBLIC OF SOUTH AFRICA

Go to the Bootcamp main page, or the registration form