

Prototyping an impact technology with digital fabrication

UGRA_014957

Departments	Department of Marketing
Teaching Languages	English
ECTS	4
Teacher responsible	Torrecilla Gumbau Carles - carles.torrecilla@esade.edu

Course Goals

Based on 3D printing, laser cutting, and Arduino board programming technologies:

Learn the basic platforms and concepts necessary to use these technologies.

Discover the possibilities of each technology individually and in combination.

Become aware of the importance and flexibility these technologies provide for innovation, both in terms of prototyping and customized production, as well as solving problems in remote or resource-limited environments.

Understand the new models of production at a macro level.

Gain confidence in the potential that these technologies offer as executives to efficiently and effectively implement their ideas.

Previous knowledge

There is no need of prior knowledge, but the experience of working on the previous projects will be very useful.

Prerequisites

No

Description

Course contribution to program

This course is designed to open up a world of possibilities for participants by introducing them to Fablabs and the diverse implementation opportunities they offer. Fablabs are fabrication laboratories equipped with advanced tools and technologies that enable individuals to bring their ideas and projects to life.

Short description

Throughout the course, participants will explore the concept of Fablabs and understand how they can leverage these spaces to transform their creative ideas into tangible projects. The course aims to nurture participants' conceptual creativity and enhance their ability to develop concrete projects using the resources available in Fablabs.

Bibliography

Gershenfeld, N., Gershenfeld, A. and Cutcher-Gershenfeld (2017), Designing Reality: How to Survive and Thrive in the Third Digital revolution, Basic Books (Book)

Anderson, C. (2012), Makers. The New Industrial Revolution, Random House (Book)

Armstrong, K., Diez, T., Goldapple, L., Schmidt, A. & Vilum, C. (2019), Design, Remix, Share, Repeat, Fab Lab Barcelona (Book)

David Lang, Zero to Maker: Learn (Just Enough) to Make (Just About) Anything, MAke: makezine.com, 978-4493-5643-9 (Book)

Vander, J. (2017), The Ultimate Guide to Designing, Prototyping and Mass Manufacturing Your Product Idea., JCAD USA (Book)

Content

#	Topic
1	Learn about Goals & Possibilities -New markets, new challenges, new society
2	Introduction to Digital Fabrication. - Makers. The New Industrial Revolution. What is a Fab Lab? - Subtractive manufacturing. Laser Cutting & 2D Design - Additive manufacturing. 3D Printing & 3D Design - Programming & Electronics Basis
3	Prototype: Learn through building and testing - What is prototyping in the early stage of innovation - Getting acquainted with different rough prototyping methods - How to get user feedback using rough prototypes - How to implement inputs from testing and iterate
4	Make: Use digital fabrication to manufacture your prototype - Fab Lab: Working on your prototype. - 2D, 3D Design & Modeling. - Mobile APP modeling. - Laser cutting, 3D Printing and Electronics manufacturing.

Assessment

Tool	Assessment tool	Category	Weight %
Written and/or oral exams	Exam	Ordinary round	25.00%
Group project	Demonstrated functions of the proposed prototype	Ordinary round	20.00%
Group project	Implemented creativity	Ordinary round	20.00%
Group project	Prototype finishing quality	Ordinary round	10.00%
Individual or team exercises	Compliance with partial delivery deadlines	Ordinary round	20.00%
Group project	Respect and organize common work spaces	Ordinary round	5.00%
Written and/or oral exams	Retake Exam	Retake	100.00%

PROGRAMS

BITLASI22-Bachelor in Transformational Leadership and Social Impact (Undergraduates: Business)
BITLASI22 Year 1 (Mandatory)