

Edition
2023/2024

Fabricademy Barcelona

The intersection of textiles,
digital fabrication and biology.

Postgraduate Diploma in Fabricademy, Textile and
Technology Academy by School of Professional
and Executive Development at UPC



Iaac



Student Profile

We wish to reach all creative disciplines dealing with design and the Maker Movement: creative players, makers, designers, artists, architects, scientists, and others.

Fashion designers

For existing fashion designers who are seeking new and innovative ways of working with textiles – whether this is with biomaterials, 3D printed clothing, interactive wearables and more. Fabricademy gives the option for fashion designers to become more sustainable in their practice.

Designers

We hope to benefit and increase the number of designers and creatives that self-produce goods by integrating resources they don't have access to. Utilizing digital platforms for all aspects of the creation process, to financing and execution.

Makers

This global movement merges artisanal skills with a digital layer of tools. We hope to benefit from this global community of do-ers by enhancing the connectivity between them and the spaces in which they work such as Fab Labs.

Fabricademy Diploma

Structure

Phase 1: Skills Capsules

The first phase (September to December) emphasizes on the development of knowledge of prominent technologies through a series of hands-on intensive masterclasses that interweave traditional craftsmanship with advanced prototyping tools, innovative materials, software and manufacturing techniques. This phase sees the students work individually in short intense exercises and experiments.



Phase 2: Personal Project Development

The second phase (January to March) capitalizes on all the learning of phase 1 in order to develop a mature personal project. Participants focus on individual in-depth applied project research, employing critical thinking, hard and soft skills for the development of innovative solutions that explore and implement more viable, sustainable and fair alternative systems of today.



Program

Classes – Global Lectures



From
September to
December

- **Week 1 State of the art, project management and documentation by Fabricademy Coordination**
Introduction to teams, Values and Principles, scope of the program, Calendar overview
State of the Art: the textile and clothing industry, sustainability, innovation and technology
Project management, Documentation and Website
- **Week 2 Digital Bodies by Anastasia Pistofidou**
Representation of the human figure in art, The mannequin in haute couture, Human anatomy, Measuring the body, Digital fabrication techniques, Materials, CAD 3D, Modelling.
- **Week 3 Open Source Circular Fashion by Zoe Romano**
Circular fashion, Hacking the fashion system, Agile fashion, Modular elements, Modular seams, References, Tools/software
- **Week 4 Biochromes by Cecilia Raspanti**
Overview and context: Biochromes; Dyes: Natural & bacterial; Base materials, animal fibers and vegetable fibers; Mordants; Color modifiers; Dyes from roots, leaves, flowers - recipes; Dyes from pigmented bacteria; Inks: botanical
- **Week 5 E-textiles by Liza Stark**
Electronic in textiles; soft/flexible/fabric circuits; analog fabric sensor and digital sensor; Materials, Tools.
- **Week 6 Biofabricating Materials by Cecilia Raspanti**
Overview and context: BioFabrication, BioFabricating materials, Hi-tech, Cooperative research, Researchers around the world, Material Archives
- **Week 7 Computational Couture by Aldo Sollazzo**
Introduction, Patterns manipulations, Box Morphing, Loops and iterations, Recursive subdivision / localized subdivision, Physics and simulations, Wrapping, Foldable patterns, Unrolls and mesh planarization, VR representations

- **Week 8 Wearables by Liza Stark**
This second class on the topic of wearables and e-textiles will provide a more advanced coverage on soft sensors and actuators.
- **Week 9 Textile as Scaffold by Anastasia Pistofidou**
Technical textiles overview and applications, Crystallization, Textile formwork, Concrete casting, CNC Milling, Composites
- **Week 10 Open source Hardware - from fibers to fabrics by Mar Canet & Varvara Guljajeva**
This class focuses on the importance of the techniques, tools and machines that create traditional fabrics. The lecture will give an overview on the evolution of these tools and how these impact production and manufacturing, with the focus on hacking, both machines and tools, and creating open source accessible machinery for a broader public.
- **Week 11 Implications and applications by Oscar Tomico**
Relation between craftsmanship, mass production, customization and services, Ultra-personalised product service systems (UPPSS): ultra-personalized fashion and connected health, Personalization at a product level: digital material production; Personalization at a systems level: generative design and fit; Personalization at a service level: end user programming
- **Week 12 Soft Robotics by Dr. Lily Chambers & Adriana Cabrera**
References, Biomimicry, Locomotion, Pneumatics, Flexures, Molding and casting
- **Week 13 Skin electronics by Katia Vega**
Wearable computing subfield that integrates technology into cosmetics for direct application to the body (skin, fingernails and hair)
- **Week 14 Project Proposal Presentation by Fabricademy Coordination**
References, Strategies.

Fab Lab Barcelona

Student teams will work for 12 weeks bootstrapping their Fabricademy Final Projects, researching and prototyping incremental improvements using manufacturing technologies, new materials, and wearable computing.

Why study Fabricademy in Fab lab Barcelona?

Over 15 years, Fab Lab Barcelona has become a global benchmark for Academy Programs and Distributed learning. Students in Barcelona are surrounded by a multidisciplinary team of professionals and researchers, enriching their learning experiences.

In addition, the Poblenou neighborhood, where FLB is located, is one of the most genuine and prolific metropolitan scenarios of Barcelona city, an epicenter of creativity and innovation where ultra-modern buildings such as the Agbar Tower, Media TIC or the Design Hub Barcelona, coexist with old warehouses, art galleries, organizations, design studios, advertising agencies, higher education centres, production companies, hotels and restaurants. The neighbourhood is so unique it has been branded, the 22@ District.



**'Rethinking the way we live,
work and play in cities.'**

Student Projects



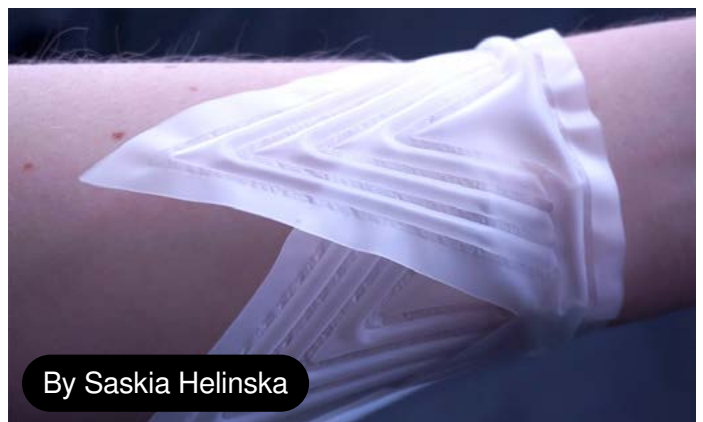
By Annah-Ololade Sangosanya



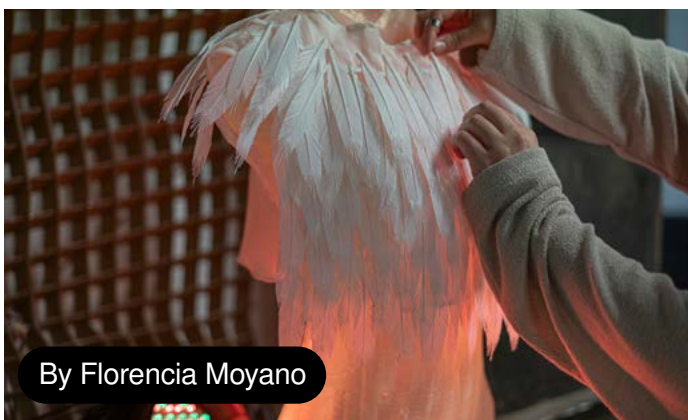
By Juan Felipe Enriquez



By Petra Garajova



By Saskia Helinska



By Florencia Moyano



By Cristina Dezi



By Gudrita Lape



By Gabriela Lotaif

Buzz Words

Wearable technology

Sustainability

Assistive technologies

Personal fabrication

Bio materials

Distributed manufacturing

Industry 4.0

“Learning by doing” methodologies

Ecodesign

Biofabrication

Biodesign

...

Contact us

luciana@fablabbcn.org

Location

Fab Lab Barcelona
Institute for Advanced Architecture of Catalunya
P: +34 933 20 95 20

Social Media

@fabricademy
@fablabbcn



FABRICADEMY

 FABFOUNDATION

Iaac

FAB
LAB
BCN

FABTEXTILES

 waag
technology & society

 waag
textilelab amsterdam

 Academy
The Academy of (almost) Anything