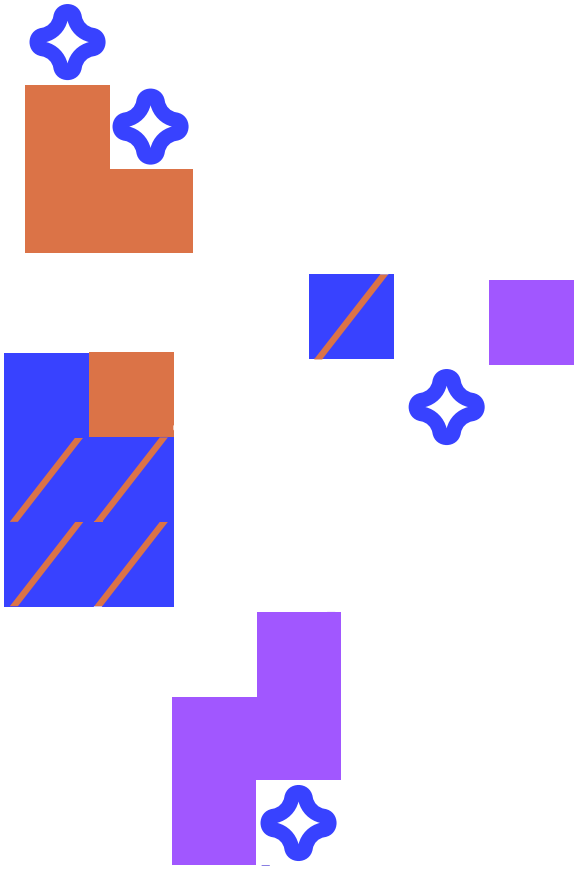
Master in Design for Emergent Futures

Directed by
Guillem Camprodon & Saul Baeza

Iaac Advanced Architecture Barcelona

ELISAVA

Master in Design for Emergent Futures



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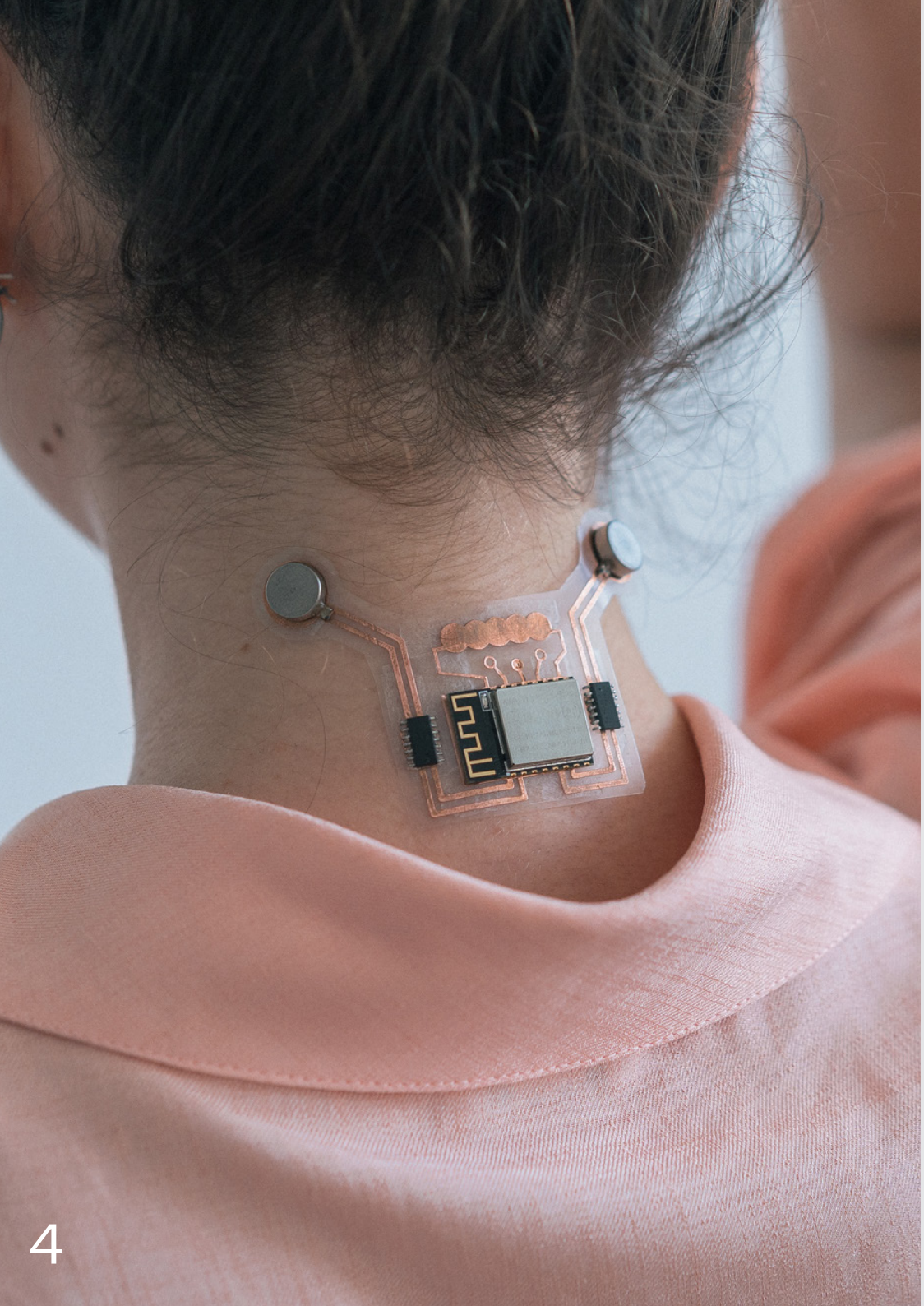


What?

The Master in Design for Emergent Futures is an immersive learning programme that focuses on Barcelona city as an experimental playground, in which design can be used to understand, develop, test and speculate interventions that respond to the wicked problems of our time.

The master evolves the practice of design beyond objects, aesthetics, form-finding and pure speculation through an approach of 'designing interventions' and hands-on-learning. The approach enhances the technical capabilities of designers in digital fabrication, artificial intelligence, and synthetic biology in order for them to physically explore their ideas. On the other hand, the approach elevates the critical thinking of designers and provides them with communication tools and philosophical understanding to build new narratives about the possible futures that can be triggered in the urban context of today. It collects the solid design and academic knowledge of Elisava School of Design and Engineering, professional and research experience of Fab Lab Barcelona and the pioneering distributed education model for digital fabrication of the Fab Academy programme.

The master is a nine/eighteen months experience for professionals and graduates who want to expand and calibrate their interests and acquire the skills to turn protests into prototypes, ideas into actions, and code into things. The programme is structured into four critical steps: Explore, Build, Reflect, and Apply. Through these four steps, the master provides designers, sociologists, economists and computer scientists the strategic vision and skills to become leaders of change in many professional environments that deal with design, complexity, innovation, and disruption.

Why?

It has been suggested that humans have become the most important geologic agents on planet Earth; more profoundly destructive than volcanoes, earthquakes or hurricanes. By controlling certain natural systems, we have changed global interactions, producing unanticipated consequences in climate, ecosystems, and infrastructure. 'Design' can give us the power to shape the environment and the imagination to create the desired reality. We need the support of technology and the skills it can enable. Design is a powerful tool for transformation. But designing emergent futures is not about looking for moonshots or massive solutions to solve all our problems at once. Instead, it proposes the creation of learning environments to experiment and speculate with new narratives around desired futures. It calls for the design of small-scale, sustained interventions to approach large-scale challenges; it looks to scalable approaches to dissolving wicked problems at multiple scales, instead of solving them with single shots.

The biosphere, financial markets, family structures, and business models are being challenged in one of the most important transition periods of human history. While the industrial revolution produced innumerable benefits to society, we are now confronted with a plethora of complex and interconnected problems that challenge our productive model: climate emergency, social inequality and the centralisation of wealth and power. The moment is now for us to formulate new questions for technology and to redefine its role in society, to create promising and viable emergent futures for humanity to thrive, not just survive.

“ Innovation is not an option, it’s a neccesity”

Who?

The Master in Design for Emergent Future is an intensive programme that is aimed for explorers that can consider themselves designers, architects, urbanists, economists, sociologists, artists or technologists, who want to become leaders and agents of change for radical transformation of the current state of affairs. This master programme is for individuals who are looking to incorporate emergent technologies as part of their set of skills as designers and agents, as well as to develop the mindset to deal with the extreme complexity of the wicked problems of our time. We are convinced that higher education can offer the opportunity for graduates and professionals to upgrade their set of skills, previously developed in more traditional environments.

This programme invites students to unlearn first, and to embrace a process of continuous learning during the programme, and after graduation; is about learning how to learn. This master is also for activists, technology enthusiasts, and the misfits that do not want to be part of the 5 to 9 work cycle, and that are convinced about the need for constructive approaches to deal with both the ecological and social crisis of today, in order to make possible a tomorrow for all. We welcome students that are willing to go beyond their comfort zone, and experiment in the city of Barcelona, while interacting with local communities of practice, experts, social leaders, scientists, and professionals in different fields, in order to scout for opportunities to intervene in the real world through design. This enables a progressive and expiral iteration process for their projects to evolve during the programme, and that could open various possibilities to continue beyond programme, either within the our network or with other organizations.

Professional Opportunities

The master goes beyond the realms of traditional design education, paving the way for a new generation of designers ready to tackle the challenges of tomorrow.

– For those interested in scholarly pursuits, the path of research opens doors to academia and beyond. This can go in two directions: one of them being to follow the journey of obtaining a PhD, the other, to join a research and innovation lab within an institution.

– Eager to bring their ideas to the market, some alumni choose the entrepreneurial route. Together with prototypes developed at IAAC, they embark on the adventure of launching startups and commercializing innovative solutions.

– For advocates of collective action and community engagement, there is the opportunity of forming a collective. Here, alumni find fulfillment in shaping methodologies, facilitating workshops, and collaborating with like-minded changemakers to create a systemic change.

Beyond professional pursuits, this programme nurtures personal development by empowering alumni to embrace the hybridity of their roles as designers. Whether by joining innovation departments in companies or embarking on consultancy roles, alumni are equipped to become agents of positive transformation.

This programme offers the following different formats:

Master in Design for Emergent Futures

YEAR01

60 ECTS
Credits

In-person
Modality

Full time
Study mode

English
Language

October 2026 to June 2027 / 9 Months
Duration

Bachelor or higher degree in Industrial Design, Product Design, Urban Design, Graphic Design, Interaction Design, Computer Science, Engineering (Mechanical, Chemical, Product, Material), Sociology, Anthropology, Economics, and other related professions
Admission

Master in Design for Emergent Futures

YEAR02

120 ECTS
Credits

In-person
Modality

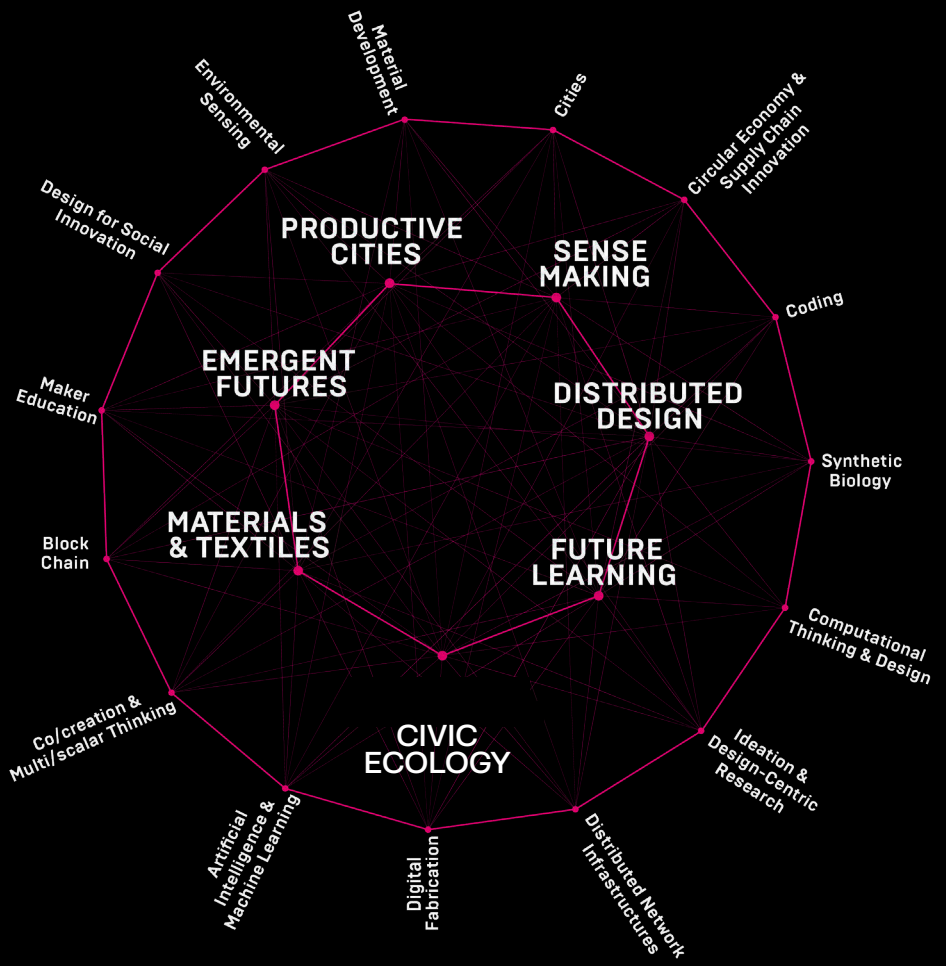
Full time
Study mode

English
Language

From October 2026 to June 2028 / 18 Months
Duration

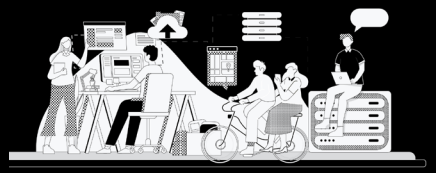
Bachelor or higher degree in Industrial Design, Product Design, Urban Design, Graphic Design, Interaction Design, Computer Science, Engineering (Mechanical, Chemical, Product, Material), Sociology, Anthropology, Economics, and other related professions
Admission

The programme follows the strategic approach of the Fab City Global Iniaitive, illustrated in the Full Stack. Through multiple scales and opportunities of intervention, the Master aims to build evidence based knowledge through student's projects, which will be connected with opportunities for collaboration both locally in Barcelona, and through the international Fab Lab and the Fab City Networks.



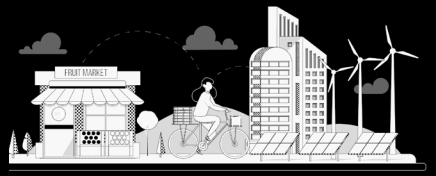
Cities Network

Shared metrics to evaluate progress towards self-sufficiency in cities. Policy-making, regulation, and planning for regenerative urbanization.



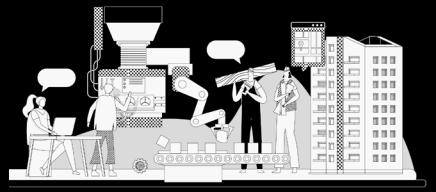
Platform Ecosystem

Project repositories for urban transformation. Distributed and decentralized repositories and value exchange mechanisms for global collaboration. Fab Chain, the blockchain project to enable distributed design and manufacturing.



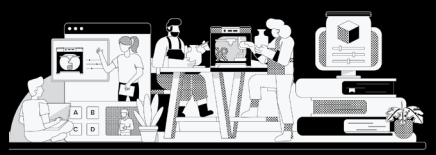
Shared Strategies

Global programs for urban transformation related to local production and processing of food, energy, water, information, or other production systems. Implementation and deployment strategies by the Fab City Collective.



Distributed Incubation

Engage the power of a distributed network of knowledge to envision, design and create open source technology for urban regeneration. "Grow with Fab" program as a distributed accelerator within the Fab Lab network.



New Forms of Learning

New skills to learn how to learn, learning by doing principles, lifelong learning basis. The Academy of Almost Anything (Fab Academy, Bio Academy, Fabricademy), STEAM education and professional training.

Distributed Infrastructure

People, communities, spaces (Fab Labs, Makerspaces, Hackerspaces), machines, tools. Thousands of spaces and communities already in place in every major and middle city in the world.

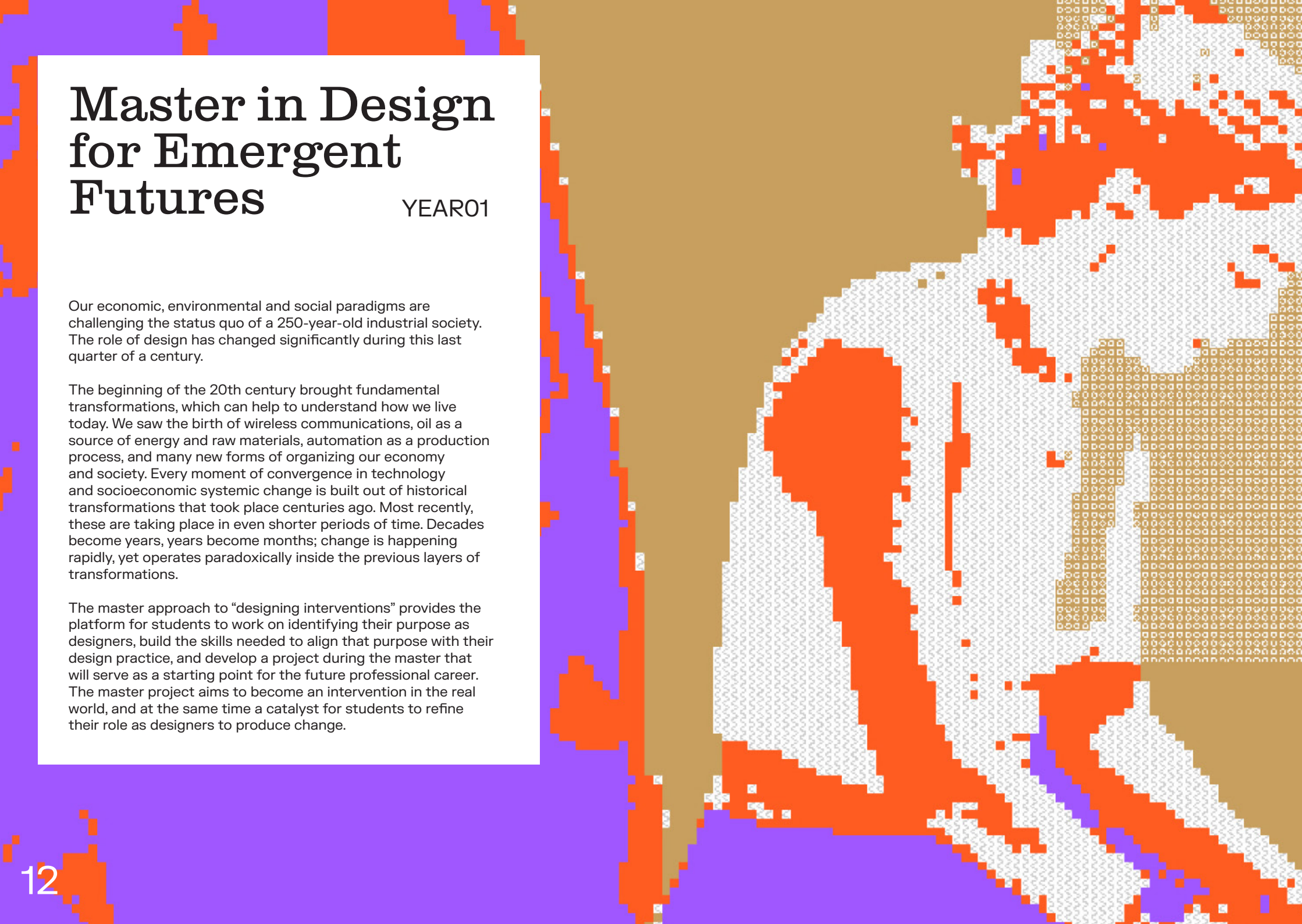
Master in Design for Emergent Futures

YEAR01

Our economic, environmental and social paradigms are challenging the status quo of a 250-year-old industrial society. The role of design has changed significantly during this last quarter of a century.

The beginning of the 20th century brought fundamental transformations, which can help to understand how we live today. We saw the birth of wireless communications, oil as a source of energy and raw materials, automation as a production process, and many new forms of organizing our economy and society. Every moment of convergence in technology and socioeconomic systemic change is built out of historical transformations that took place centuries ago. Most recently, these are taking place in even shorter periods of time. Decades become years, years become months; change is happening rapidly, yet operates paradoxically inside the previous layers of transformations.

The master approach to “designing interventions” provides the platform for students to work on identifying their purpose as designers, build the skills needed to align that purpose with their design practice, and develop a project during the master that will serve as a starting point for the future professional career. The master project aims to become an intervention in the real world, and at the same time a catalyst for students to refine their role as designers to produce change.



Academic Structure

The Master in Design for Emergent Futures is organized in three terms (Oct-Dec | Jan-Mar | Apr-Jun), each including Design Studios, complementary Seminars and experts' masterclasses. In addition, a Research Trip is included in the master.

In this Master, we don't teach students a methodology nor a set of golden rules to be applied in given assignments. Instead, it is a journey and exploration on how projects be manifestos to introduce new outputs.

We support students in the development of their identity and vision, and encourage them to grow their unique set of skills, knowledge and attitude in order to navigate through the uncertainty inherent when designing possible futures.

The Design Studios are the main part of the programme as they focus on real world experimentation and socio-technical development. During the year, students will be developing technical, aesthetic and conceptual skills by working on real-life scenarios.

Seminar sessions are designed to delve into specific domains of knowledge and are delivered by relevant experts, including both practitioners and scholars. Throughout the academic year, international experts in the field of design and emergent technologies will be contributing to the programme as guest lecturers.

The Master in Design for Emergent Futures is a journey through time and multiple dimensions, which when intersected, opens a new point of view, understanding and translating ideas into projects. These four dimensions are:

Explore

We expose the students to a set of technologies that have the capacity to disrupt our present understanding of society, industry and the economy.

Build

We provide a set of skills and tools that will help to translate ideas into prototypes, and prototypes into products, which can then be tested and iterated throughout the design process.

Reflect

We support the students in the development of their identity and skill set, knowledge and attitude as designers of possible futures.

Apply

We encourage students to create a culture of making where prototyping acts as a generator of knowledge, and interventions become message carriers of a future that is about to come.

The Master in Design for Emergent Futures is connected with the Exploring Emergent Futures platform at the Royal College of Art, London, which has been developed by James Tooze and Tomas Diez since 2015.

01 First term — October – December

Design Studio 01	Intro Course 1	Intro Course 2	Intro Course 3
Framing Design Interventions	Exploring Emergent Technologies	Designing in the First Person	Introduction to Digital Fabrication
10 ECTS	3 ECTS	3 ECTS	3 ECTS

02 Second term — January – March

Design Studio 02	Seminar 1	Seminar 2	Seminar 3
Embodying Emergent Contexts	Prototyping with Emergent Technologies I	Beyond Human-Centered Ethics	Digital Prototyping for Design I
10 ECTS	3 ECTS	3 ECTS	3 ECTS

03 Third term — April – June

Design Studio 03	Seminar 4	Seminar 8	Seminar 6
Prototyping Alternative Presents	Prototyping with Emergent Technologies II	Unfolding hybrid profiles	Digital Prototyping for Design II
10 ECTS	3 ECTS	3 ECTS	3 ECTS

Transversal Workshop 2 ECTS
Lecture Series 1 ECTS

NOTE: The above presented programme is specific to Master in Design for Emergent Future 2025-26

Seminars & workshops

First, second, third term

Research, design & development studios

Aim to take research areas of interest and initial project ideas into an advanced concretion point, and execution plan. The studio structure in three terms could be understood as follows:

Term 1
ntroductory studio

Analyzing the past.
References, state of the art.
Identifying areas of interest.

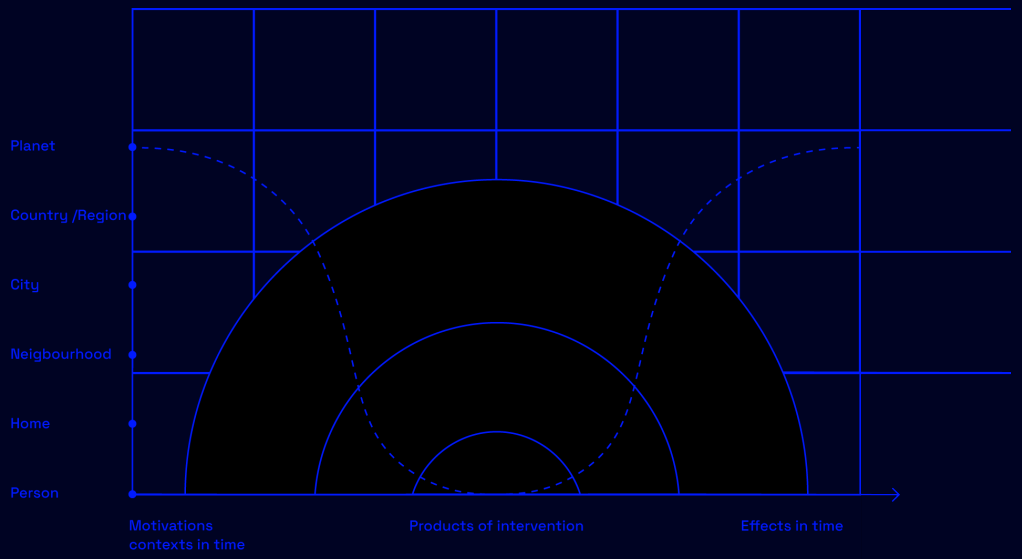
Term 2
Research studio

Forming the present.
Building the foundations.
Applying knowledge into practice. Prototyping and experimenting.

Term 3
Development studio

Defining the future.
Establishing roadmaps.
Forming partnerships.
Testing ideas and prototypes in the real world.

Multiscalar design strategy



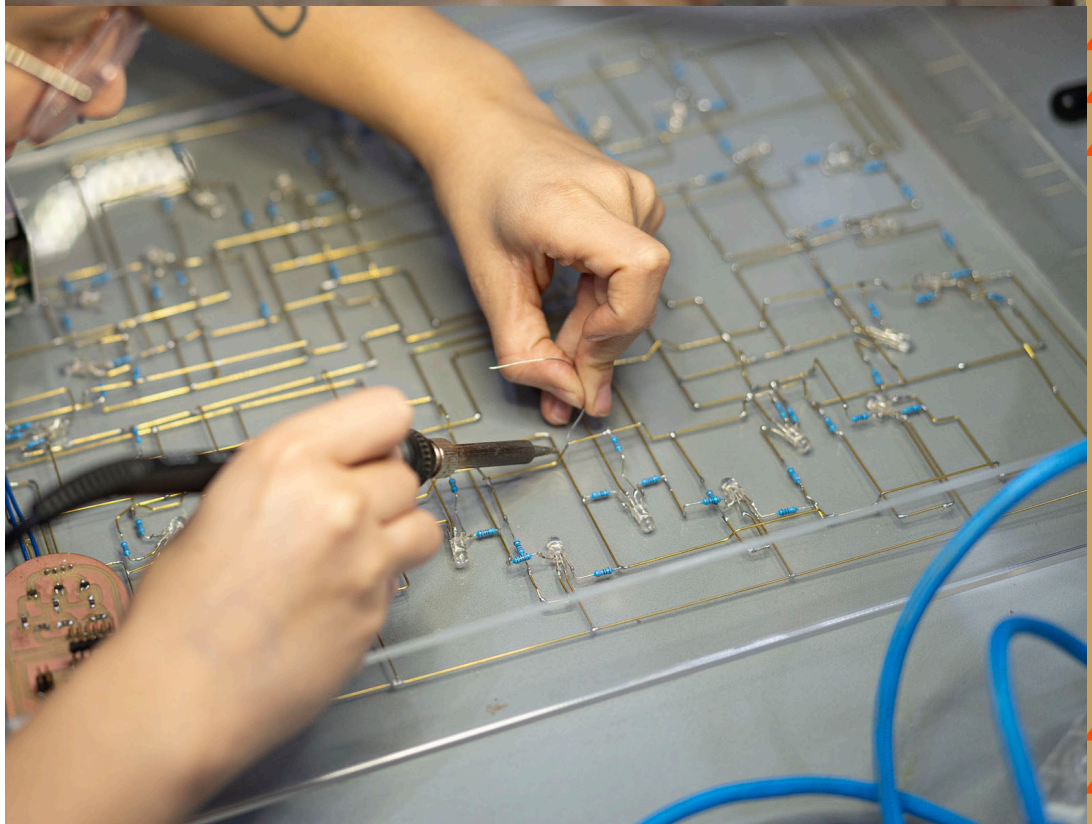
Seminars & workshops

Instrumentation | First, second, third term

Fab Academy

The Fab Academy is a distributed educational model directed by Neil Gershenfeld of MIT's Center For Bits and Atoms and based on MIT's rapid prototyping course, MAS 863: How to Make (Almost) Anything. The Fab Academy began as an outreach project from the CBA, and has since spread to Fab Labs around the world. The programme provides advanced digital fabrication instruction for students through an unique, hands-on curriculum and access to technological tools and resources.

During this adapted version of the Fab Academy, students learn how to envision, prototype and document their projects and ideas through many hours of hands-on experience with digital fabrication tools, taking a variety of code formats and turning them into physical objects.



Master in Design for Emergent Futures

YEAR02

The second academic year of the programme, allows students to deepen their training and further develop the final Thesis Project presented at the end of the first academic year. It also allows students to continue their research and innovation agendas using a multiscalar, experimental and realistic approach, and turning the final projects developed in the first year of the programme into living platforms for academic research, business development or direct impact on open source communities.

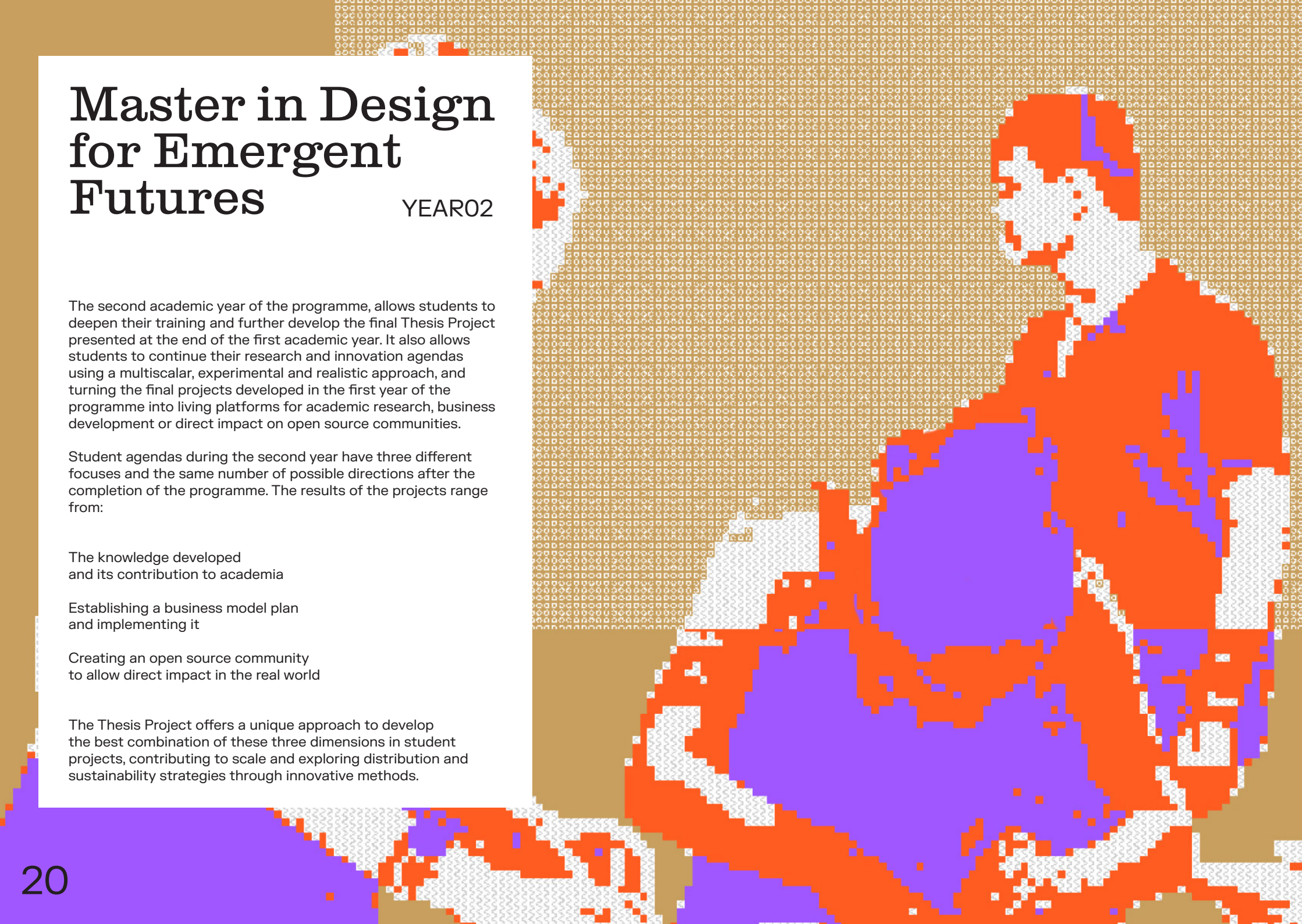
Student agendas during the second year have three different focuses and the same number of possible directions after the completion of the programme. The results of the projects range from:

The knowledge developed
and its contribution to academia

Establishing a business model plan
and implementing it

Creating an open source community
to allow direct impact in the real world

The Thesis Project offers a unique approach to develop the best combination of these three dimensions in student projects, contributing to scale and exploring distribution and sustainability strategies through innovative methods.



Academic Structure

The “Master in Design for Emergent Futures Project ”(YEAR02) has 3 clear principles:

Provide a strategic vision and tools / techniques for designers so that they can develop ideas and be able to translate them into real projects and in context.

Focus on the design of interventions in the form of products and platforms that seek to produce new emerging futures, previously analyzing the current challenges of society and industry.

Work at multiple scales to design and test interventions in the real world.

During the first year of the master’s degree, students will acquire a broad and informed vision of the impact of technology on design and culture. They will make prototypes and test some of these technologies in the different design workshops.

During the second year of the master’s degree, students will continue with their research and innovation agendas using a multiscale, experimental, and realistic approach. They will turn the final projects developed in the first year of the program into living platforms for academic research, business development, or direct impact on open source communities.
Thanks to the combination of academic, business, and maker approaches, students will be able to further deepen and develop their hybrid profiles created during the first year, taking their development to a professional level.

At the end of the second year we hope that the students have developed their projects within the framework of the following guidelines:

Academic Orientation

CTS credits and continuation of the academic career through other Master or Doctorate programmes

Business Orientation

Development of a business structure around a product or service

Collective Orientation

Implementation of an accessible technological development for open source communities

01 First term

October – December

- **Thesis Project I** — Implementation — 9 ECTS
- **Seminar 7** — Theory & Practise I — 3 ECTS
- **Seminar 8** — Applied Research I — 3 ECTS
- **Seminar 9** — Emergent Technologies I — 3 ECTS

02 Second term

January – March

- **Thesis Project II** — Validation — 9 ECTS
- **Seminar 10** — Theory & Practise II — 3 ECTS
- **Seminar 11** — Applied Research II — 1 ECTS
- **Seminar 12** — Emergent Technologies II — 1 ECTS

03 Third term

April – June

- **Thesis Project III** — Dissemination Scale & Distribution — 9 ECTS
- **Seminar 13** — Theory & Practise III — 3 ECTS
- **Seminar** — Emergent Communities — 3 ECTS
- **Final Thesis Project** — Industry Collaboration & Publications — 9 ECTS

Lecture Series — 3 ECTS

NOTE: The above presented programmeme is specific to 3DPA 2024-25

Thesis project

The Thesis Project design workshop is the backbone of the 2-year programme, since within it the knowledge acquired in year 1, and the complementary seminars and workshops, are applied. That is why we have three types of Thesis Project, related to each quarter of the programme, and each with its specific objectives.

Implementation

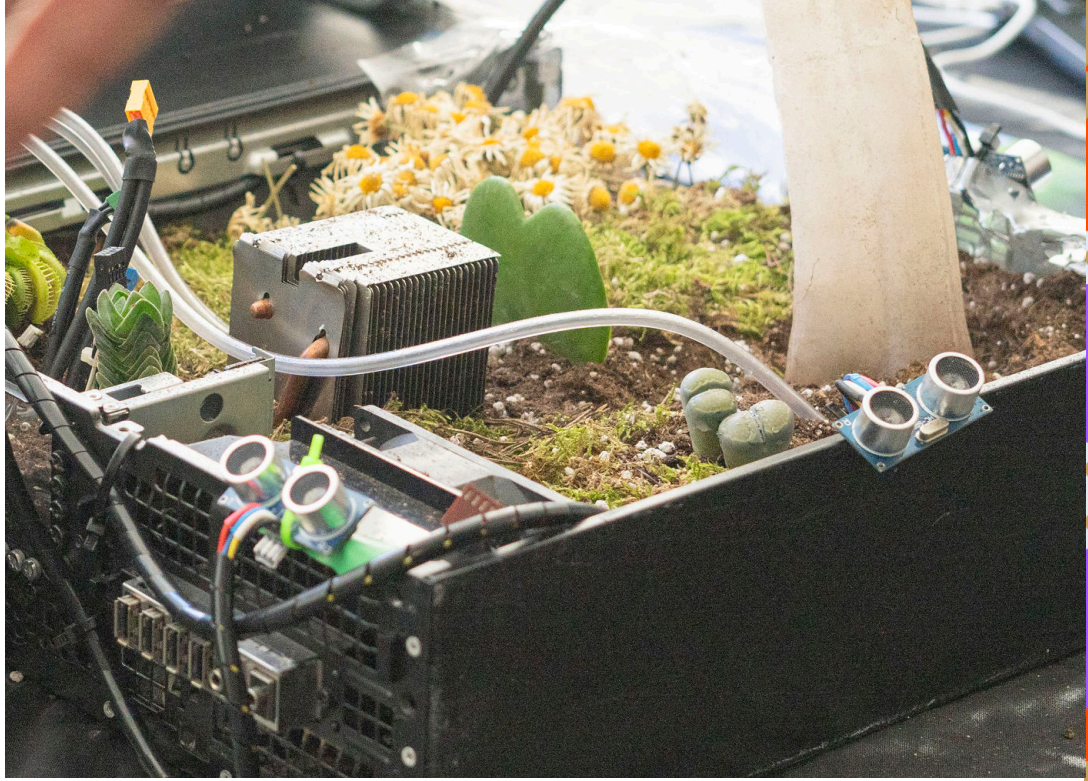
The first Thesis Project, students will focus on conducting research and establishing the scientific background of their projects. They will delve into relevant theories, methodologies, and frameworks to inform their design process. Students will gain a solid understanding of the context and theoretical foundations of their projects.

Validation

In the second design workshop, students will shift their focus to situating their projects within a specific community and context. They will explore the social, cultural, environmental, political, and economical aspects that influence the development and implementation of their designs. Students will gain insights into the needs, aspirations, and challenges of the community they aim to serve.

Dissemination

In the final Thesis Project workshop, students will work on the scalability model of their projects. They will explore strategies for scaling up their designs to reach a wider audience and have a greater impact. Additionally, students will develop sustainability and viability strategies for their projects. They will consider factors such as funding, partnerships, and distribution to create a comprehensive plan for implementing their designs.



Photos from Master in Design for Emergent Future Project 2024 Design Dialogues
Master in Design for Emergent Future Project 2021 Sensitive Matter

Seminars & workshops

Applied Research

In their second year, students engage in applied research through the course Interaction and Prototyping – Llum. The course invites them to explore light as both a material and a medium for experimentation, using prototyping and interactive design to connect research with practice. By working with light's aesthetic, technical, and symbolic dimensions, students develop critical insights and applied projects that reflect how design can shape emergent futures.

Photo from Project
Autonomous tree- 2021

Emergent Tecnologies

This seminar focuses on deepening the knowledge explored within the first year of the master in the technological areas of digital manufacturing and robotics, artificial intelligence and machine learning, and finally synthetic biology and biomaterials. During the seminar, the theoretical and practical content on the implementation of these technologies within the final master's projects will be taught. The emerging technologies seminar considers the ethical implications of their use in relation to their environmental and social impact.

Theory and Practise

This seminar provides the necessary knowledge to develop and communicate a design research project. The seminar offers students the methodologies and tools necessary to establish a design project as a continuous research process, from which opportunities for experimentation in the real world are generated.

Faculty

Guillem Camprodon

Co-Director

Guillem Camprodon is the executive director of Fab Lab Barcelona at the Institute for Advanced Architecture of Catalonia (IAAC), a benchmark in the network of over 2000 Fab Labs and home of the Distributed Design Platform. He is passionate about teaching and is the co-director of the Master on Design For Emergent Futures, a collaboration between IAAC and ELISAVA. Previously, he led Smart Citizen, a platform that opposes the traditional top-down Smart City model, empowering communities with tools to understand their environment. As a former research lead, he participated in many European-funded research and innovation projects, such as Making Sense, iSCAPE, GROW Observatory, Organicity, DECODE, ROMI and Reflow.

Saul Baeza

Co-Director

Saúl Baeza is DOES, MAYBE and VIBE Creative Director and VISIONS BY PEOPLE ABOUT MATERIAL CULTURES Magazine Founder and Editor-in-chief. While lecturing at Elisava Barcelona University of Design and Engineering, he also researches functional and digital identities with the “Future Everyday” Research Group (TU Eindhoven Research) and “Futures Now” Research Group (Elisava Research). He has been visiting professor and lecturer at international universities, educational institutions and cultural venues such as Harvard GSD, Central Saint Martins and London College of Communication (UAL), Institute for advanced Architecture of Catalonia (IAAC), RMIT University Melbourne, Rhode Island School of Design, Pascual Bravo University in Medellín, Sónar+D, Victoria&Albert Museum, CCCB and DHUB, among others.

Chiara Dall’Olio

Programmes Coordinators

Faculty

Santi Fuentemilla
Digital Fabrication (Future Learning Lead at Fab Lab Barcelona - IAAC)

Manuela Valtchanova
Ephemeral architecture, operative cartography and social cohesion (Elisava)

Ane Guerra
Storytelling and creative writing (Elisava - Agencia Letraherida)

Marta Handenawer
Transmedia narratives, social interaction and art (Elisava - Domestic data Streamers)

Lluis Nacenta
Music, technology, and science

Nuria Conde Pueyo
Synthetic and computational biology (Universitat Pompeu Fabra at PRBB)

Jonathan Minchin
Design and sustainability (Civic Ecology Strategic Advisor at Fab Lab Barcelona - IAAC)

Jessica Guy
Design strategist and visual storyteller (Creative Action Researcher at Fab Lab Barcelona - IAAC)

Julia Bertolaso
Design strategist and visual storyteller (Creative Action Researcher at Fab Lab Barcelona - IAAC)

Christian Ernst
Creative Technologist, designer (MOVING Works, CERNST)

Pietro Rustici
Software engineer, designer (Amazon)

Oscar Gonzalez
Computer science, tools and platforms (Sense Making Expert at Fab Lab Barcelona - IAAC)

Milena Calvo
Communities Expert at Fab Lab Barcelona - IAAC

Adai Suriñach
3D printing, sense making (Digital Fabrication Expert at Fab Lab Barcelona - IAAC)

Olga Trevisan
Visual artist, participatory practices (Communities Development Researcher at Fab Lab Barcelona - IAAC)

Daniel Mateos
Digital fabrication, design and electronics (Creative Prototyping Expert at Fab Lab Barcelona - IAAC)

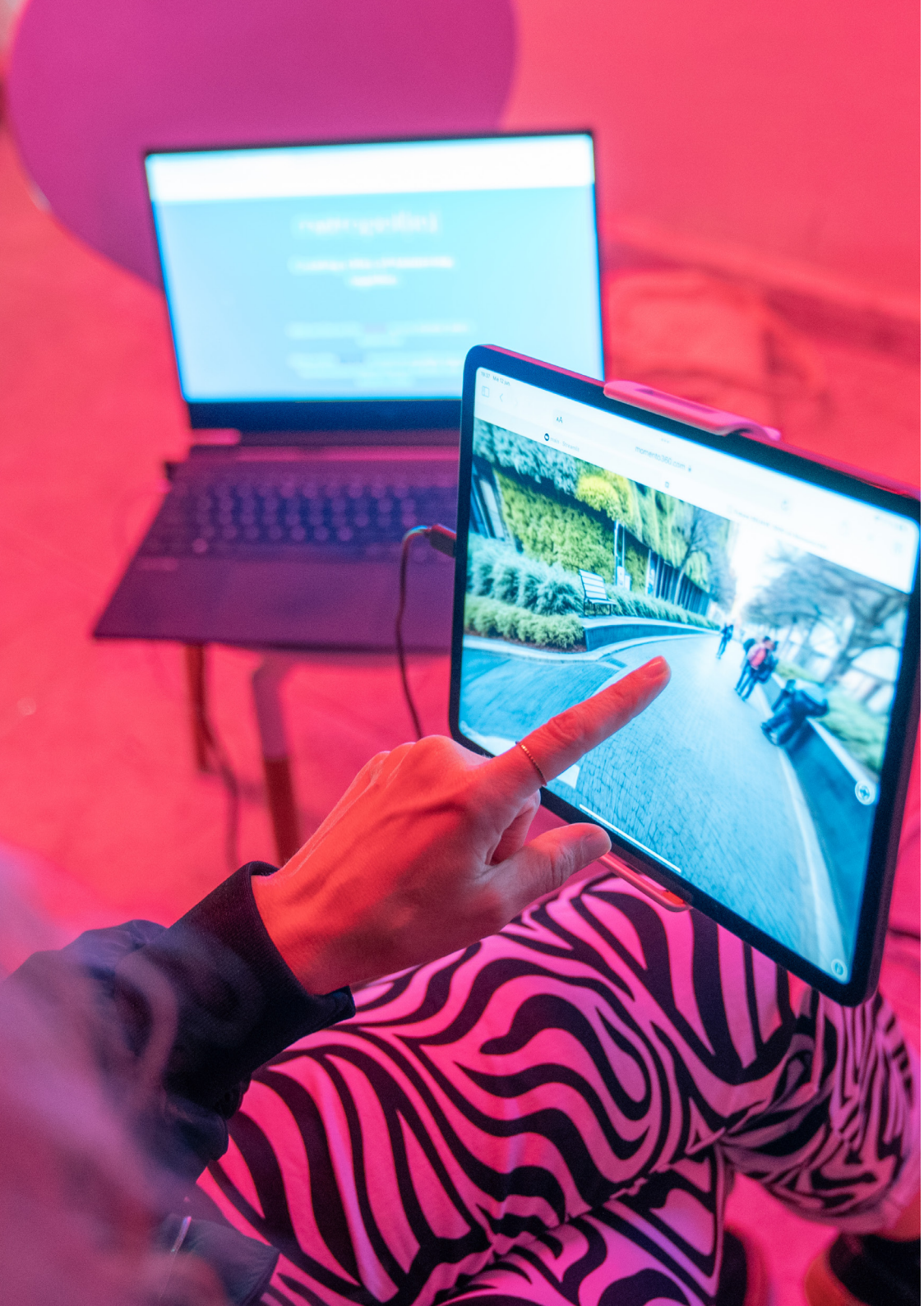
Mikel Llobera
Digital fabrication, graphic design, programming (Facto)

Mario Santamaría
Digital art, photography, fotografía, video, performance, web (Trama33)

Jori Garreta
Creative Developer. Digital craft, human experience, and emerging technology.

Petra Garajová
Materials and textiles

Filippo Rosati
AI, live coding (Umanesimo Artificiale)



Advisors

Tomás Diez
Fab City Foundation

Oscar Tomico
Design research methodologies, posthuman sustainability (Eindhoven University of Technology)

Mariana Quintero
Digital literacy. embodied cognition

Ron Wakkary
Design Research Methodologies, Posthuman Sustainability (Eindhoven University of Technology)

Angella Mackey
Interaction Design, Industrial Design, Wearables, Fashion, Media Art and Design Research

Kristina Andersen
Interaction Design, Industrial Design, Wearables, Fashion, Media Art and Design Research

Adria García
Transition Design (Holon)

Markel Cormenzana
Transition Design (Holon)

Ramón Sagüesa
Artificial Intelligence (UPC)

Thomas Duggan
Materials and generative design (Thomas Duggan Studio)

Citlali Hernández
Designer, artist, interaction design (Axolot, Turbulente)

Pau Artigas
Artificial Intelligence and Machine Learning (Taller Estampa)

Bani Brusadin
Curator, educator and researcher

Ce Quimera
Artist and researcher (WetLab - Hangar)

Mette Bak Andersen
Material Design Lab at KEA

Thomas Twaites
Maker, designer, researcher

Manel De Aguas
Cyborg artist and transpecies activist

Lorenzo Patuzzo
Blockchain and Collective Intelligence (AKASHA Foundation)

Anastasia Pistofidou
Materials and Textiles Strategic Advisor at Fab Lab Barcelona - IAAC & PhD Candidate at Elisava Research

Marta Delatte
Digital communications advisor

Arnau Sala
Digital communications advisor

Lara Campos
Material researcher (S-Biotica)

Toni Navarro
Philosophy, gender and technology

Toni Llacer
Social science, phylosophy, economics

Ruben Pater
Journalism, activism, and graphic design

Merce Rua
Transition Design

Ariel Guersenzvaig
Design Research and Ethics (Elisava)

Daniel Charny
From Now On

Indy Johar
Dark Matter Labs

James Tooze
Royal College of Arts and Design

Jose Luis de Vicente
Design Hub Barcelona

Liz Corbin
Institute of Making, UCL

Neil Gershenfeld
Center for Bits and Atoms at MIT

Primavera de Filippi
CRNS

Nadya Peek
Human Centered Design & Engineering (University of Washington)

Previous Projects

Alumni

Previous projects

Authonomus Tree

An art installation in which a tree is transformed to hypothetically act and represent on the behalf of non-human living beings within established human systems of governance and discourse.

The tree is the primary actor representing an ecological authority that exists to protect and advocate for the best interest of non- human living beings. Humans, subjected to the tree's authority, are required to schedule a visit to it to receive an assessment of their own activities.

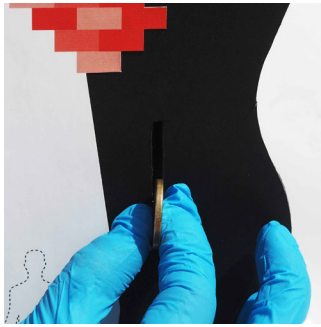
A digital interface featuring a chat-bot enables a conversational experience between the visiting human and the tree and during the conversation the tree issues all humans, regardless of their behavior, a fine as punishment for the collective harm they cause over time. The overall form and presentation of the installation captivates and draws attention to the tree's hypothetical power and promotes people to reflect on the ecological world's needs and challenges and their personal relationship to non-humans. Autonomous Tree is a project by programme 2020-21 Krzysztof Wronski.as a tool to further and extend their practice, creativity and curiosity.

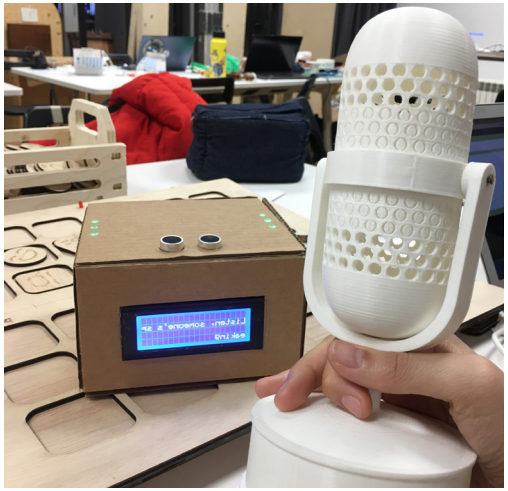
Imagine future of jobs

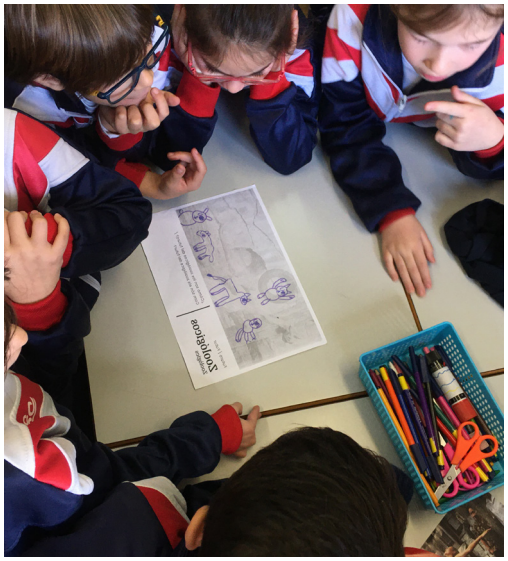
A design learning experience & educational tools to teach about future of jobs for next generation.

The report from World Economic Forum estimates that 65 % of kids entering primary school today will ultimately end up working in completely new job types that don't yet exist. The job market of 2026 will likely look quite different from today's career landscape, so next generation must prepare themselves for careers that don't exist in the present. At the same time, it's not an easy task to educate students to make them recognise about jobs that they will do when they grow up. But if the jobs in the future will change very fast and unstable, how career education for next generation will look like?

"Adapt yourself with creativity" is the essential point to grow up in an unpredictable future. Imagine Future of Jobs, by programme 2019-20 Wongsathon Choonhavan, is a design learning experience that fosters conversations around the jobs of the future with a creative approach, through a variety of formats and resources, such as imagine future jobs with magic machines, create a collage job figure toy.







Little Big Futurest

An interactive board game to inspire forward-thinking discussions in educational environments.

Given the surge in popularity of social media and its proven effect of creating echo chambers and filter bubbles, children are increasingly exposed to opinions that already echo what they might hear from their parents or peers. In addition, children and adolescents are taught about the world's climate and social crisis but are seldom given tools to ideate futures that are desirable, inclusive and also bold. Little Big Futures, 2022-23. Wen Qian Chua, Ariel Ignacio Gallardo Lopez and Jimena Lucia Salinas Groppo is an interactive board game using digitally fabricated tools, designed for children aged 12 and above to explore and express their perspectives and attitudes. The project's wider objective is to provide educators worldwide with DIY tools for 1-hour sessions that promote constructive debates and inspire forward-thinking discussions in educational environments.

Ongo Board

The quest to replace plastic with biomaterials in the surfing industry: turning fungi into surfboards.

The modern surfboard comprises layers of unrecyclable plastic which often break and pollute our oceans.

Ongo Board, by bio designers and entrepreneurs Roberto Broce (Class of 2021-22), Jessica Dias, Ignacio de Juan-Creix and Rian Davidson, is a mycelium-based surfboard that utilises fungal mycelium and agricultural by-products to create a compostable product that is harmless to the surfer, the shaper, and the ocean. Myco-composites provide the perfect foundation for a surfboard due to their lightweight construction and buoyancy. Building a 100% biodegradable surfboard allows the investigation of how low tech solutions of grown materials could compete with industry standard petroleum based materials for high performance sports, which can serve as a springboard for more complex experiments with fungal materials.

The Puerta Project

An intervention bringing machine learning, design and other emergent technologies into the learning environment

The Puerta Project, by Oliver Juggins (class of 2018-19), provides everything required to bring machine learning and artificial intelligence principles to the learning environment.
The project applies design-based research methodologies to create bespoke, fun and engaging STEAM activities for children between the ages of 8-15, framing itself within the growing field of 'AI literacy'. The realisation of the project consists of a series of workshops that not only make children aware of the presence of machine learning in their lives but present it tas a tool to further and extend their practice, creativity and curiosity.

Slow Lab

Through redesigning tools frequently used in our everyday lives, the project paves the way for a more sustainable future that is less dependent on technology.

By slow movement we understand the current that promotes the slowdown of our fast-paced lifestyle. At the same time, low-tech presents an alternative approach to technology that creates useful and sustainable products that are able to be easily repaired or recycled.

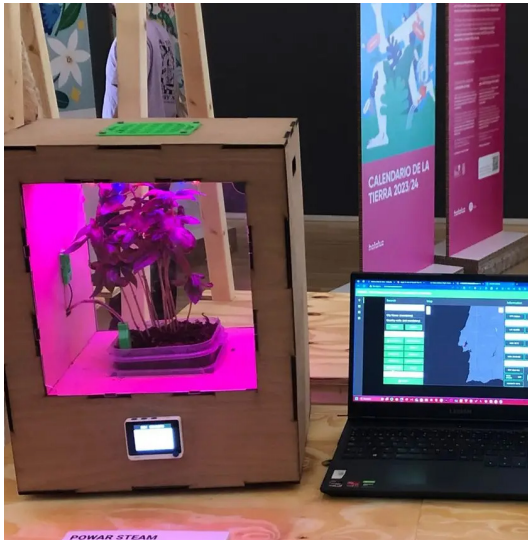
Based around slow movements, the Slow Lab project, Audrey Belliot (class of 2021-22), Gerda Meleschkin and Paula Bustos, works towards bringing more awareness to our daily lives and habits. The product line, inspired by ancient techniques, aims to show us different ways we could use to be more conscious about the environment and ourselves. By questioning and redesigning some of the tools we use in our daily lives, the project contributes to society by making it less dependent on high technology.
The work spans from a product like "Bici-Música", a bike which produces energy in order to play music, to events like "Solar Brunches", or the "House of the Future", a prototype that is 100% carbon neutral.

Bagaceira Project

Transforming sugarcane waste into objects that last.

The Bagaceira Project, by Julia Steketee (class of 2021-22), applies regenerative practices, natural building techniques, and the principles of the circular economy to create local, waste-based materials from the bagasse which is the main byproduct of the sugarcane industry.

Sugarcane is the world's largest crop so that makes bagasse one of the world's most abundant agrowastes. Following the circular economy principles, the sugarcane waste is collected from local restaurants in Barcelona, after they press it for juice and transformed into new material formulas to scale them up for application in artistic, furniture, interior design, and architectural projects.



POWAR

A low-cost open-source climate simulator.

It is predicted that by 2050 the weather of London will be like the weather of Barcelona... What if people could start growing the food they grow nowadays with their future predicted weather for 2050? What if we could empower individuals and communities with data that could help them address climate change? we could shorten the technological educational gap with low-cost DIY STEAM education tools? What id we could teach and learn about climate change effects into our food systems in a more practical way?

POWAR (Plant Observatory of Weather Adaptability for Resilience) is a DIY, low-cost, open-source climate simulator to grow food under different weather conditions. Developed by Pablo Zuologa (Class of 2010-20), it's a box that connects to the internet and downloads real-time data from a weather API and can replace in its interior some weather characteristics like the amount of sunlight, water, or temperature. The aim is to obtain crucial data on the impact of climate change on them which allows them to make more informed decisions, and thus strengthen their resilience.

ROMI Robotic for Microfarms

The Institute for Advanced Architecture of Catalonia coordinates the EU project Robotics for Microfarms (ROMI) under the framework H2020. IAAC is part of a consortium formed by a team of interdisciplinary experts in computer science (Inria, Sony), robotics and electronics (UBER, Sony, IAAC), plant modelling and agronomy (CNRS, Inria), as well as microfarming (Châtelain) which will be in charge of developing ROMI initiative, an open a lightweight robotics platform for small farming land areas.

By implementing robotics in farmlands, ROMI will assist in weed reduction and crop monitoring and it also will help in reducing manual labour, saving farmers a 25% of their time. The technology applied in this project will acquire detailed information on sample plants and will be coupled with a drone, developed by Noumena, that acquires more global information at crop level.

Robotics for Microfarms will produce an integrated, multi-scale picture of the crop development that will help the farmer monitor the crops to increase efficient harvesting. This project aims to adapt and extend state-of-the-art land-based and air-borne monitoring tools to handle small fields with complex layouts and mixed crops. IAAC in collaboration with an international consortium will develop and bring to the market and affordable, multi-purpose, land-based robot, integrated 3D plant analysis in the robot for detailed plant monitoring, an aerial NERO drone for multi-scale crop monitoring and test the effectiveness of this solution in real-world field conditions.

Open source Behives

The Open Source Beehives project is a network of citizen scientists tracking bee decline. We use sensor enhanced beehives and data science to study honeybee colonies throughout the world. All of our technology and methods, from the hive and sensor kit designs to the data, are documented and made openly available for anyone to use.

The primary goal is to determine the cause(s) of bee decline, to identify potential solutions, and to encourage networks of concerned citizens to study and redress the issue through the use of digital technologies in fabrication and information. The project is founded on the belief that open source innovation is the most direct way to address our global problems, and therefore, the software, hardware, data, and methodologies used by it are the perpetual property of the public domain.

Smart Citizen

The Institute for Advanced Architecture of Catalonia coordinates the EU project Robotics for Microfarms (ROMI) under the framework H2020. IAAC is part of a consortium formed by a team of interdisciplinary experts in computer science (Inria, Sony), robotics and electronics (UBER, Sony, IAAC), plant modelling and agronomy (CNRS, Inria), as well as microfarming (Châtelain) which will be in charge of developing ROMI initiative, an open a lightweight robotics platform for small farming land areas.

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Textile, Clothing & Businss labs

The current fashion ecosystem creates colossal amounts of waste from the initial product manufacturing to product disposal. The Textiles, Clothing and Business Labs (TCBL) is investigating new ways of designing and making in the fashion industry, creating a diverse contemporary industry consisting of sector enterprises, innovation labs, service providers, and business advisors. The objective of the TCBL is to build alternative paths to over- production and reductive value, whilst returning 5% of production capacity and reducing environmental footprint by 20% within 2025.

Fab Lab Barcelona is contributing the space and expertise for project development with its own experimental textile and bio
lab. The Fab Textiles lab established the Fabricademy course - an educational programme which trains creative individuals to work at the intersection of textiles, biology, digital fabrication and innovation. Fabricademy was a programme co-founded by Fab Lab Barcelona's Anastasia Pistofidou, Cecilia Raspanti and Fiore Basile in 2017. The Fab Textiles Lab is an extensive space for imagination, generating projects ranging from bioplastics, digital wearables, bacteria dying and more.

Network

Akasha Hub

AKASHA Hub is a decentralized project and a self-managed community, with its main node in Barcelona.
It's a community with diverse professional profiles that connect people, projects and agents to generate sustainable ideas, find possibilities for innovation and develop new models of society at the GLOCAL level.
AKASHA Hub works to stimulate curiosity towards a social self-awareness, and generate willingness to start projects with the ability to create a coherent, sustainable, respectful and healthy environment.
We collaboratively organize face-to-face and online activities to share knowledge and points of view on all possible areas and in different depths, in order to have an overview and as complete as possible of the current state of humanity and its environment.
We investigate locally and globally how we do what we do (as a society), what tools were, are and will be at our disposal. We also investigate issues and trends at the local level together with the actors involved to prioritize the issues in a coherent and necessary way.
We accompany the conversations and stimulate interactions between different participants, elaborations of the problems and a self-coordination of working groups to want to solve it. We share and provide tools for collaboration, self-management and project start-up in order to promote the creation of actions that bring us closer to the society we yearn for.
We connect with local and interlocal people and entities in order to create a knowledge infrastructure that can be useful for the development of all activities.

Ateneus de Fabricació

The Ateneus de Fabricació, or Fab Labs, are a public service that disseminates technology and the science of digital manufacturing. They are places to learn, collaborate on different projects, and form part of the city's social development. Anyone can make use of their spaces, tools and public resources, and propose projects to improve their immediate surroundings.
The Fab Lab Network is made up of the city's various "ateneus", Barcelona's leading digital manufacturing technology dissemination, training, and creation spaces at the service of citizens, the education community, businesses, associations, and the community.

Space10

A research and design lab on a mission to create a better everyday life for people and the planet.
In August 2023, after nearly 10 years of collaboration with the owner of the IKEA brand, SPACE10 closed its doors. SPACE10 is the story of how a small team of radical thinkers emerged as one of the world's most renowned research and design labs.
Funded by IKEA, SPACE10 took up residence in the meatpacking district of Copenhagen in 2015.
We set out to create a space where people and ideas could meet and interact. We would explore ways to improve life at home, and ease our impact on the home we share — planet Earth.
SPACE10 became a truly unique environment. People from around the world came together to discuss, prototype, explore, exchange and design a more hopeful tomorrow.
We researched and designed ways to democratise access to human and planetary essentials such as food, water, energy, and housing. We explored more sustainable, circular and regenerative approaches to living, eating, and manufacturing, alongside the most promising avenues of emerging technology.

Materfad

We are the Barcelona Materials Centre, created and driven by the FAD, Fostering Arts and Design. At MATERFAD we work as an observatory of the future, conducting technological research and surveillance focused on innovation, sustainability and creativity through materials.
In the showroom, located on floor -1 of the Disseny Hub Barcelona, there are physical samples of these materials, and in the MATERFAD database, you can consult thousands of innovative, commercially available materials, processes and technologies, facilitating technological transfer between widely differing sectors such as biotechnology, construction, transport or textiles, among others.
We assist businesses in identifying opportunities or developing new proposals through innovation projects associated with the materials, from the technical to the creative aspect. As well as market vision, we support experimentation and future projects, acting as a technical and business incubator for start-ups on the basis of materials.

Taller Estampa

Estampa is a collective of programmers, filmmakers and researchers working in the fields of audiovisual media and digital environments. Our practice is based on a critical and archaeological approach to audiovisual technologies, on researching the tools and ideologies of artificial intelligence and on the resources of experimental animation.

Fab Academy

Fab Academy is a distributed educational programme that offers a unique and collaborative learning experience. Each participating Fab Lab provides the space, inventory and machines for students to pursue their own project goals while interacting in a global classroom where they can share their progress, ideas, problems and solutions. Fab Academy teaches a “learning to learn” approach, where students share methods and practices in an open-source and collaborative environment. During this 5-months programme, students are supported by local instructors, who guide them in the various assignments and topics covered each week. Every week is introduced via an interactive video stream guided by Neil Gershenfeld, Director of the MIT’s CBA. At its core, Fab Academy empowers students to learn by doing, inspires them to make stuff locally, and to become active participants in sustainable cities and communities.

The Academany

The Academany - The Academy of (almost) Anything. With the increasing availability and ease of use of digital tools and systems, both in the world of fabrication, biology and design, the possibility to solve problems locally is becoming greater every day. But, often overlooked, the tools and means to build objects destined for everyday use, or to safely use synthetic biology to locally produce energy or medicine, is not at all easy or trivial. The Academany is a new global educational structure that offers high level education all over the globe at connected sites, offering the same infrastructure to all students.

Bioma

The central axis of the project is the permacultural garden, a space for connection and coexistence between people and their environment.
It has become a space where the Poblenou neighborhood, organizations and citizens come together, where sustainability and the promotion of environmental awareness among users are influenced.
Activities are carried out in the environmental, educational, cultural, artistic, sports and circular and regenerative economy fields.
The space is managed by the Bioma association, born from entities and groups that have interacted in the space since its creation: ConnectHORT @connecthortbcn, BioArquitectura Mediterrània @ bioarquitecturamediterrania, and AbonoKm0 @abonokm0.

Fab Lab Network

The Fab Lab Network is an open, creative community of fabricants, artists, scientists , engineers, educators, students, amateurs, professionals of all ages located in more than 90 countries in approximately 1,500 Fab Labs. From community based labs to advanced research centers, Fab Labs share the goal of democratizing the access to the tools of technical invention. This community is simultaneously a manufacturing network, a distributed technical education campus, and a distributed research laboratory working to digitalize fabrication, inventing the next generation of manufacturing and personal fabrication.

IAM

IAM is a creative research lab founded by Lucy Black-Swan (Paris, 1986) and Andres Colmenares (Bogota, 1982) based in Barcelona. In close collaboration with a broad network of specialists, they help citizens and organisations make responsible decisions by using futures as tools to anticipate challenges and opportunities, while exploring the socio-ecological impacts of digital technologies and the internet(s) through collective learning initiatives, partnerships and commissioned projects.
Since 2015, IAM has organized annual conferences, developed creative partnerships and designed collaborative experiments, bringing together hundreds of designers, artists, strategists, researchers and policy makers, to share knowledge, exchange perspectives and collectively imagine better futures.
They also partner and work with foundations, cultural institutions, universities, creative tech companies, innovation labs and media organisations around the globe, including BBC, Tate, Mobile World Capital Foundation, Open Knowledge Foundation, WeTransfer, NESTA, Centre for Investigative Journalism, SPACE10, University of Arts London, Red Bull and Ableton.

Futurity Systems

Futurity Systems i’s a diverse team of designers, engineers, thinkers and makers. They work together with their clients to tackle uncertainties by analyzing, synthesizing, engineering and applying futures to build better futures, together.
Analize Futures: Break down problem spaces into constituent parts, quantifying the components and understanding relationships via our data driven Futurity Science Tool.
Synthesize Futures: Design new solutions by adding, subtracting, rearranging, and taking other actions on the parts via our design methodology Synthesizing Futures.
Engineer Futures: Build the designed solutions, in the form of conceptual, experiential, or functional artifacts and prototypes.
Apply Futures: Test the artifacts in lab conditions, with users / customers, or in the market.

Design Hub Barcelona

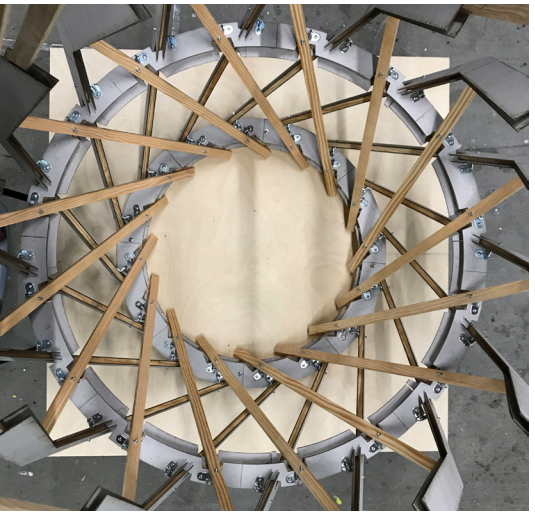
The Barcelona Design Museum is a museum dependent on the Barcelona Institute of Culture that originates from the integration of the collections of the Museum of Decorative Arts, the Museum of Ceramics, the Textile and Clothing Museum and the Graphic Arts Office. The museum is located in the Disseny Hub Barcelona building, in the Plaza de las Glorias, sharing headquarters with the Promotion of Arts and Design (FAD) and the Barcelona Design Center (BCD), two pioneering institutions in the promotion and the development of design in Catalonia.
The center wants to become a meeting point or nucleus of a network made up of people and institutions linked to the world of design that will share relevant information related to the sector. The objective is to stimulate both research and economic activity linked to the world of design, using both its own heritage funds and a continuous analysis of the present of the world of design.

About the Institute

To inspire architects of change to envision, prototype and impact the future.

The Institute for Advanced Architecture of Catalonia (IAAC) is an international centre for research, education, production and outreach, with the mission of envisioning the future habitat of our society and building it in the present.

Based in Barcelona, the Institute offers multidisciplinary programmes that explore international urban and territorial phenomena, with an emphasis on the opportunities that arise from the emergent technologies, and the cultural, economic and social values that architecture can contribute to today's society.



IAAC the Institute for Advanced Architecture of Catalonia

We don’t see the future as a distant horizon awaiting us. We understand the present as a moment to influence what comes next. The future is our daily inspiration, our driving force, and our biggest commitment: our minds live in the cities, the technology and the problems of the future.
We stand at the intersection of imagination and reality, where every prototype holds the potential to shape the next era of habitat. We are architects of change.

Guided by our unwavering conviction that a better built environment is possible, we push the boundaries of today through innovative education, research and development. These are our tools to address today’s problems and achieve the future we pursue for our cities.

> “ To change something, build a new model that makes the existing model obsolete”
>
> — R. Buckminster Fuller

Innovation center

We equip “architects of change” with knowledge, skills, tools, networks, and critical thinking to envision, design, and prototype alternative radical and plausible futures. Through immersive learning and educational experiences, practical projects and visionary ideas are brought to life.

In this dynamic, collaborative space, students, researchers, industry experts, communities of practice and academics exchange ideas to find new innovative pathways. Explorations aimed at solving the challenges surrounding how habitat relates to the rest of the factors of the urban environment — individuals, communities, sustainability, etc.

We go beyond being an educational institution. We are an ecosystem of innovative research, conceptualization and materialization of disruptive solutions aimed at building a better future.

IAAC is located in the Poblenou neighbourhood of Barcelona, in the recently created district known as 22@, an international reference for companies and institutions oriented toward the knowledge society. In the 22@, cutting-edge firms, universities, research and training centres are integrated with different agents of promotion that facilitate interaction and communication among them.

The neighbourhood is close to the historic centre and the seafront, and features some of the most iconic landmarks of the city such as the Agbar Tower and the Design Hub building. The ongoing projects of the Plaça de les Glòries and the Sagrera APT station are also making it one of the most dynamic enclaves in the city.

Pujades Campus

IAAC is housed in two old factory buildings, with 4.000 m2 of space for research, production and dissemination of architecture.

The space itself is a declaration of principles, embodying an experimental and productive approach to architecture.

The IAAC Pujades Campus premises include the Fab Lab Barcelona, an architecture and design-oriented digital fabrication laboratory, and a second Fabrication Laboratory, entirely dedicated to the development of IAAC students projects.

Valldaura Campus

Valldaura Labs is IAAC's second campus located in the Collserola Park, the green heart of Barcelona's Metropolitan Area.

The campus is a 140 hectares park and testing ground for innovation, that features the latest technologies in the fields of energy, information and fabrication.
The core of this innovative project developed by IAAC is a series of laboratories that work to set a new benchmark for self-sufficiency.

The Valldaura Labs premises include the Green Fab Lab, a fabrication laboratory oriented towards self-sufficient and productive solutions. The Food Lab and the Energy Lab, allowing students to research the specifics of the production of key elements involved in self-sufficiency.

The Fab Lab Barcelona and Green Fab Lab are also part of the global network of Fab Labs, set up by MIT's Center for Bits and Atoms: small scale production and innovation centres equipped with digital fabrication tools and technologies for the production of objects, prototypes and electronics. Fab Lab's final mission is to provide access to the tools and the knowledge to educate, innovate and invent using technology and digital fabrication. This initiative aims to allow anyone to make (almost) anything, thereby creating opportunities to improve lives and livelihoods around the world.

Fab Lab Barcelona

At Pujades campus

Fab Lab Barcelona is the headquarters of the global coordination of the Fab Academy programme, in collaboration with the Fab Foundation and the MIT's Center for Bits and Atoms. Fab Lab Barcelona is located in the Pujades Campus, where it supports different educational and research programmes related to the multiple scales of the human habitat. The Fab Lab Barcelona has produced projects such as Hyperhabitat or the Fab Lab House and is currently developing projects of different scales, from smart devices for data collection by individuals, such as Smart Citizen, to the new production models for cities with the Fab City project being implemented in Barcelona in collaboration with the city council.

Green Fab Lab

At Valldaura Campus

The Green Fab Lab is a digital fabrication lab that uses natural resources, part of the Plan Avanza national network of laboratories in Spain. One of its research lines is centred on the development of new materials from natural ingredients such as wood, earth or minerals for building, to make bricks, glass and resins using simple ancestral technologies and modern high-tech processes. The laboratory has several traditional bòvila brickyard kilns of the type traditionally found on large rural estates in Catalonia.

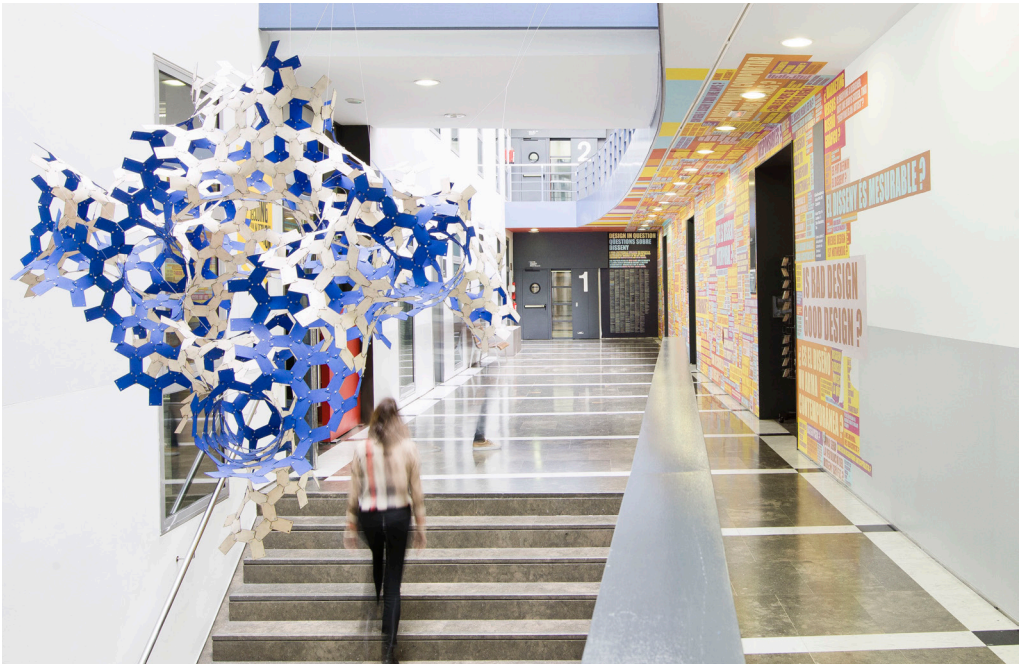
Elisava
Barcelona School of Design & Engineering

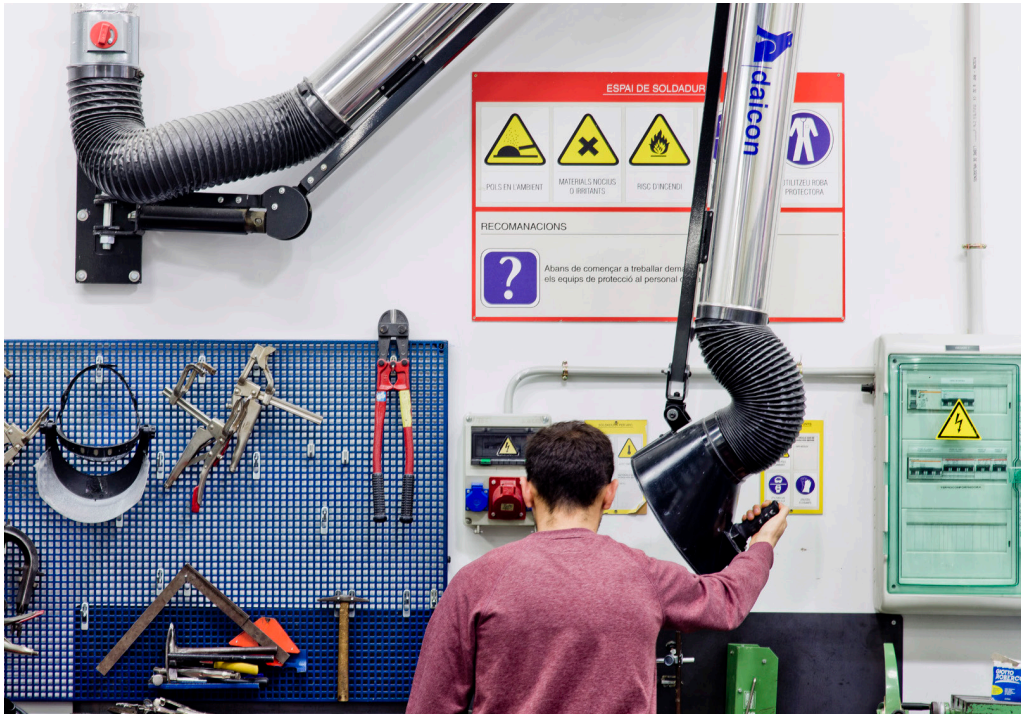
ELISAVA Barcelona School of Design and Engineering is the pioneer academy in this field in Spain, with more than half a century of experience. Founded in 1961, it promotes education, knowledge, research, development and innovation on design.

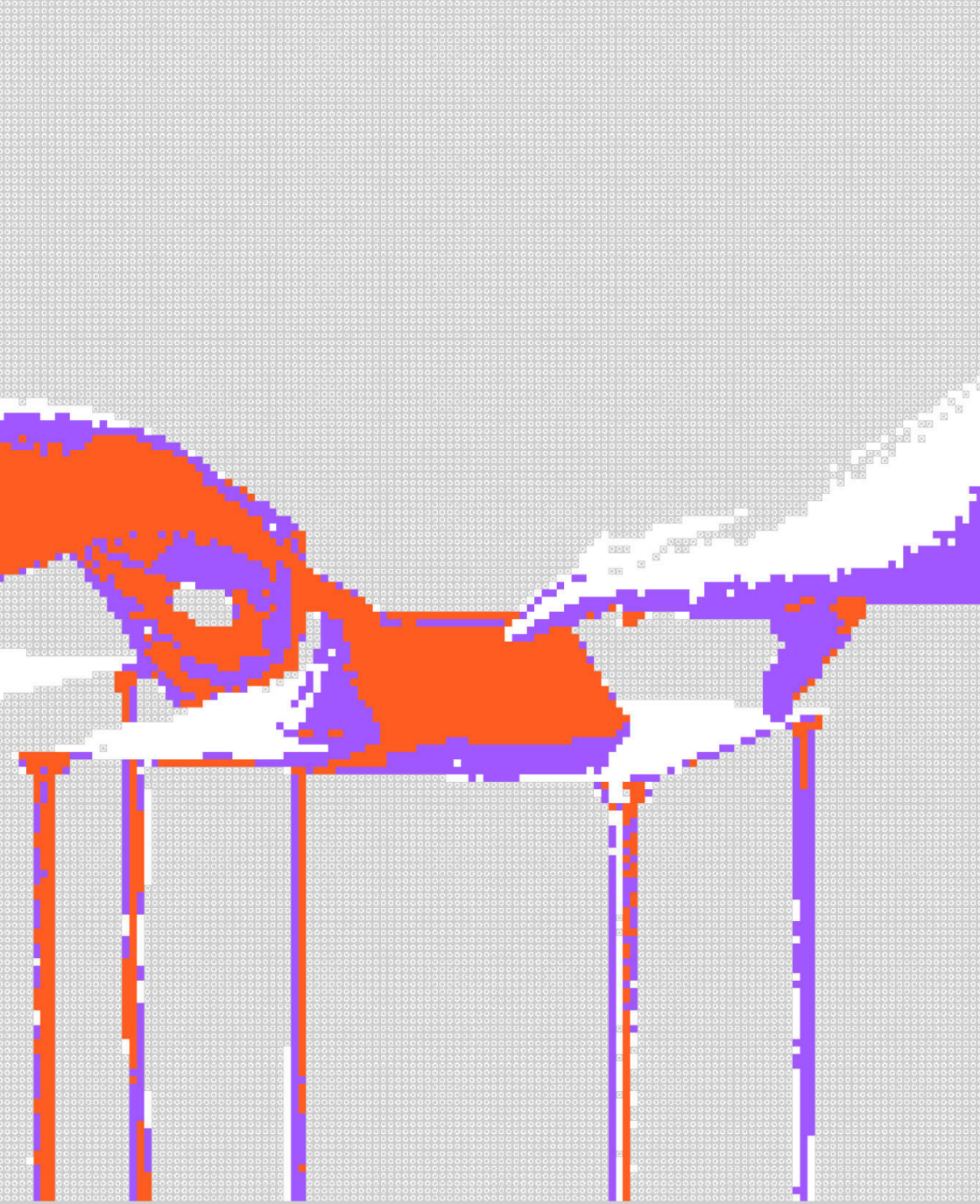
Associated with the Universitat Pompeu Fabra (UPF), ELISAVA offers a Degree in Design, a Degree in Engineering in Industrial Design and a wide range of Master and Postgraduate programmes in the areas of Space Design and Architecture; Graphic Design and Communication; Product Design; Design, Strategy and Management; and Interaction Design; to which must be added the MUDIC, first official Master in Design and Communication in Spain, and the innovative Master in Creative Process, to be taught from 2018.

Through the relationship with businesses, institutions and society, ELISAVA trains its students to encompass professional challenges in an international context and it also delves into practical work and stimulates critical reflection among them, so they finish their studies with the ability to answer the needs of an evolving society.

Inspiring, multidisciplinary, knowledge-generator and trendsetter, our centre trains professionals who will challenge the future.







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