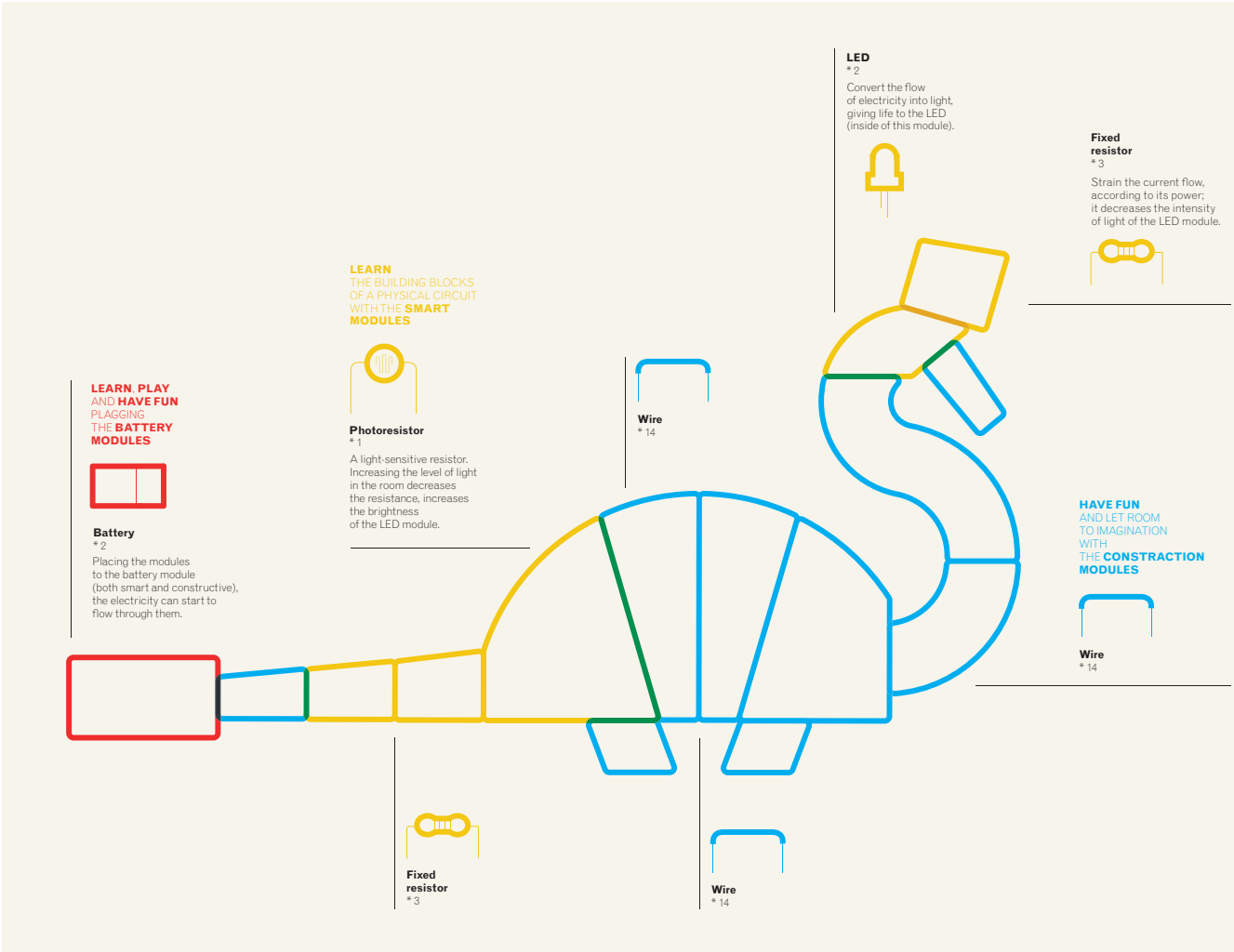
University of Applied Sciences and Arts of Southern Switzerland
Department for Environment Constructions and Design

SUPSI

Master of Advanced Studies in Interaction Design 2017–2018

Designing Advanced Artifacts, Enviroments and Services



SUPSI DACD LCV
Campus Trevano
CH-6952 Canobbio

Lugano, September 18th 2017

cover image

Kime, by Giulia Galli, design schema

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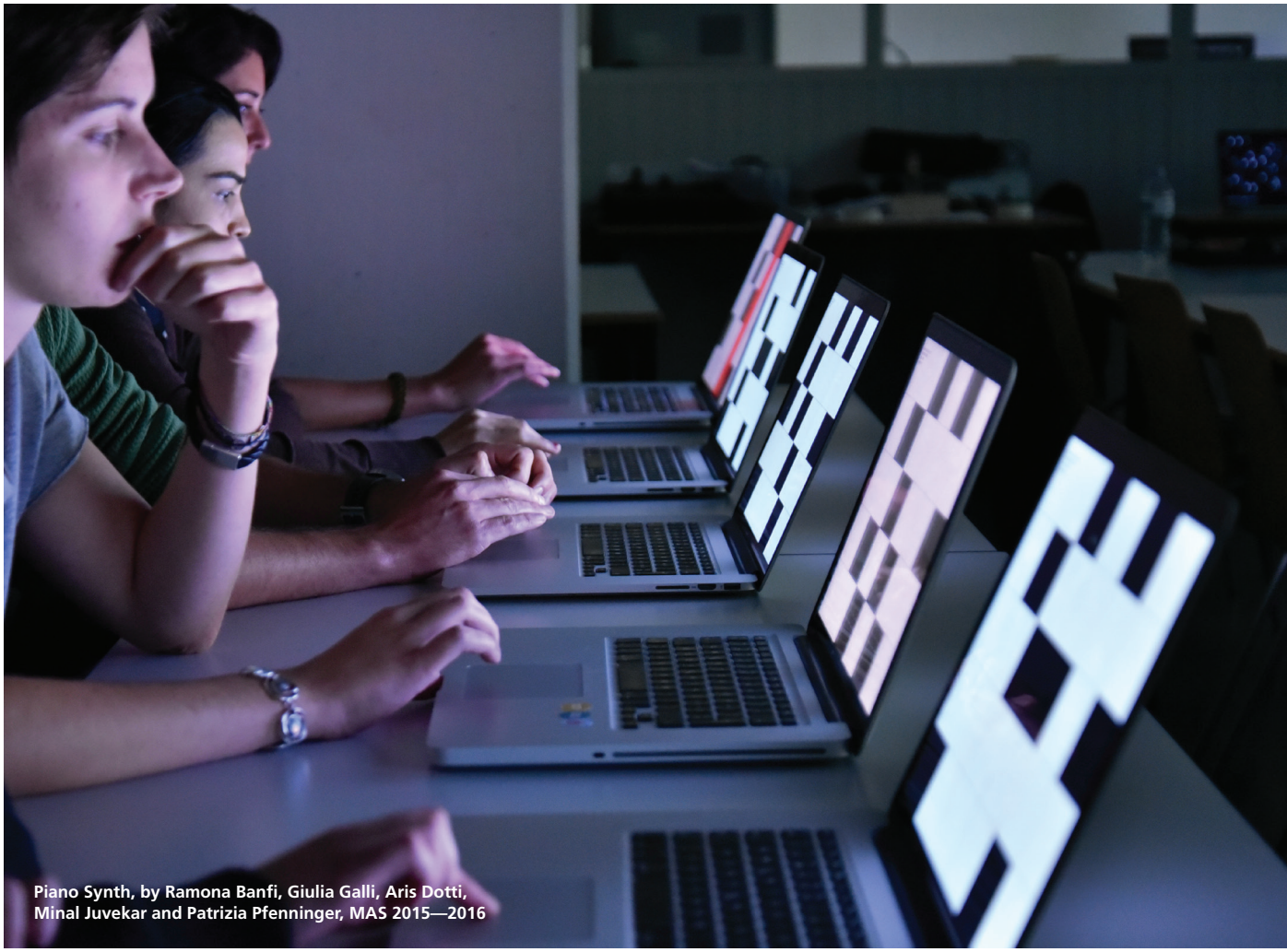
MAS Program 2017–2018



Piano Synth, by Ramona Banfi, Giulia Galli, Aris Dotti,
Minal Juvekar and Patrizia Pfenninger, MAS 2015—2016

The MAS Program

The MAS Program in Interaction Design offers to graduate students an advanced professional training that amalgamates the design culture with technological innovation and social changes. As a specialized course, the MAS Program in Interaction Design merges knowledge coming from the design disciplines in a unique profile able to set new thinking in design, technological innovation and human needs. For this reason, the MAS Program has a multidisciplinary perspective and it is conceived as result of an original set-up of three domains:

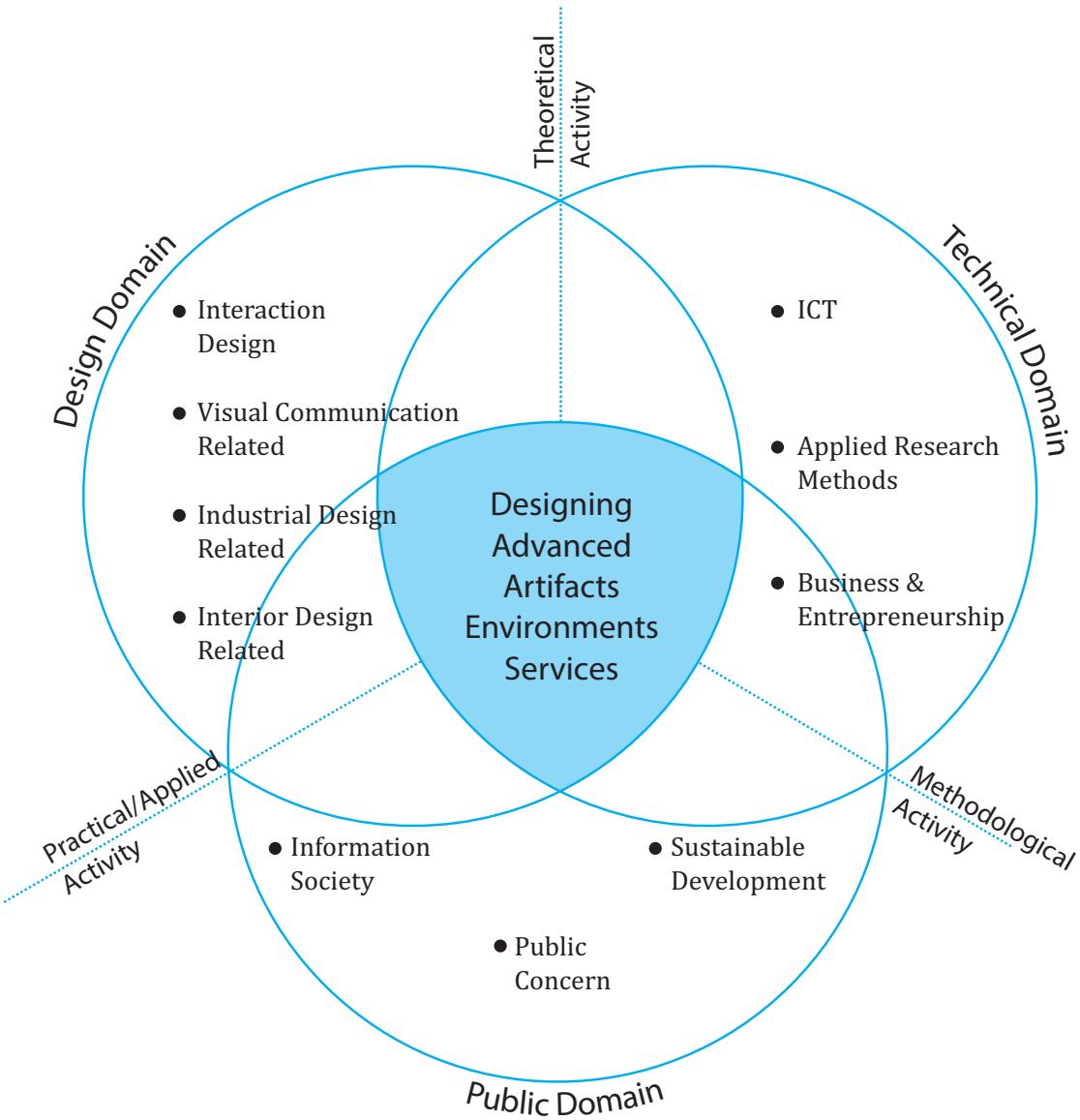
1. the Design Domain: interaction design disciplines and knowledge related to the wide field of design, such as the Visual Communication field, the Industrial Design field, the Interior Design field, as well as new fields, such as Services Design, Open Design, etc.;
2. the Technical Domain: composed of those ICT technologies useful to driving design innovation and for techniques of applied research methods and business models to provide the organizational feasibility and rigor of design solutions;
3. the Public Domain: the intellectual, critical and social role of the designer, where design answers human needs and rights considering three emerging topics: the information society, the sustainable development, and the public concern.

The MAS Program merges these different competencies in a specific curriculum, where Interaction Design is the key element for the conception and creation of Advanced Artifacts, Environments and Services.

Schema

The curriculum of the MAS Program provides students whit the opportunity to acquire specialized knowledge and competences, specific methods for the analysis and the solution of design problems and the ability to autonomously understand and practice research methods and to adopt these methods in their own work. The ability to adopt existing methods and to develop new ones is one of the central competences of the MAS Program that qualifies the student for careers in companies where innovation crosses interaction design area.

Modules of the MAS Program focus on the different specializations through these three main activities: theoretical activities (courses and seminars), methodological activities (courses, seminars and workshops) and projects (design workshops and courses), as well as the development of the thesis project.


Theoretical Activity
Design Domain
Technical Domain
Public Domain
Practical/Applied Activity
Methodological Activity
Interaction Design
Visual Communication Related
Industrial Design Related
Interior Design Related
ICT
Applied Research Methods
Business & Entrepreneurship
Information Society
Sustainable Development
Public Concern
Designing
Advanced
Artifacts
Environments
Services

Structure of the MAS Program

The MAS Program covers 2 semesters and it is developed through four modules. Each module awards 15 ECTS. Module 1, 2 and 3 award a Certificate of Advanced Studies (CAS).

The CAS1 Interaction Design Fundamentals gives students the basic skills for the interaction design practice.

The CAS2 Designing Advanced Artifacts and the CAS3 Designing Advanced Environments and Services are project-driven modules and give students the opportunity to face a particular area of interaction design through the development of projects on different scales and centred on specific design topics. CAS2 and CAS3 include theoretical, methodological and technical courses that give students the necessary knowledge to support the design activity.

The Thesis Project Module is focused on the development of the thesis project, where the student works in term of design research to generate innovative products and new forms of entrepreneurship.

CAS1 9 weeks	**CAS2** 8 weeks	**CAS3** 9 weeks	**THESIS PROJECT MODULE** 15 weeks
15 ECTS Interaction Design Fundamentals	6 ECTS Designing Advanced Artifacts	5 ECTS Designing Advanced Services	15 ECTS Thesis Project Development
	9 ECTS Th/Meth/Tech courses	5 ECTS Designing Advanced Enviroments	
		5 ECTS Th/Meth/Tech courses	

The CAS1 Interaction Design Fundamentals is organised in a series of workshops and courses that merge design competencies with those ones coming from the computer science fields. These work-shops give students the fundamental design and technical backgrounds of the interaction design discipline useful to prototype interactive artifacts, environments and services.

The CAS2 and CAS3 investigate three specific design topics:

- the conception and the development of Advanced Artifacts, the relation between the human being and the development of new kinds of interactive objects;
- the conception and the development of Advanced Environments, considering human beings and their immersion in a specific physical or cognitive context;
- the conception and the development of Advanced Services, how human beings are involved in new work sequences and processes, new relations, experiences and forms of business.

The Thesis Project Module allows the thesis development. The student has to select and define the thesis topic, to write an essay to focus one's research area, to search for a thesis advisor and the establishment of a network of competencies with people, institutions and companies necessary to the completion of the thesis project.

The MAS curriculum is composed of theoretical (Th), methodological (Me) and technical (Te) courses in an average of 40%, and of project units for the remaining part.

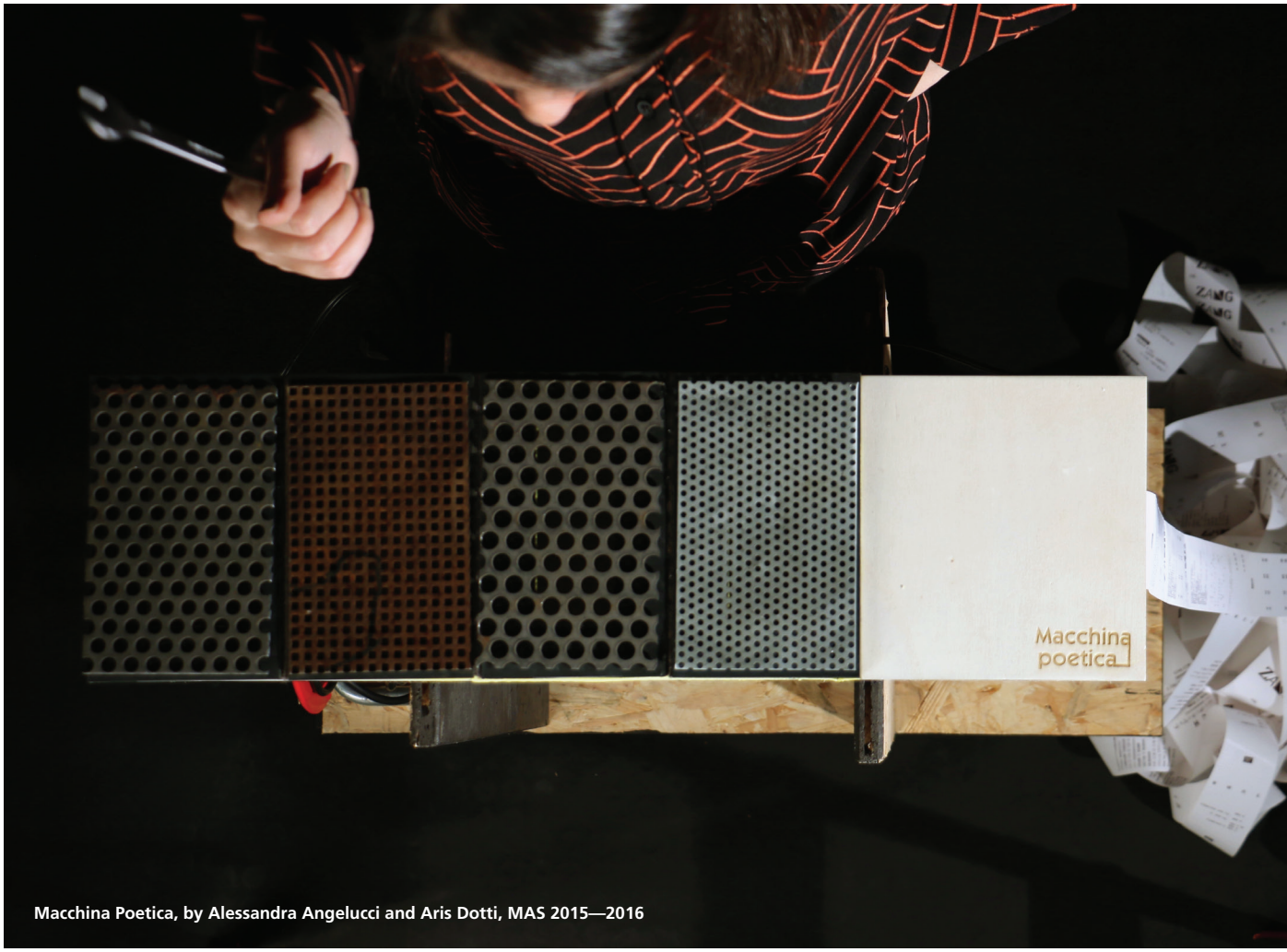
CAS1 Interaction Design Fundamentals
The module offers an overview of the interaction design field through theoretical and methodological courses and a series of workshops that have the purpose to create a common background for students coming from different design fields, as well as from the computer science field. They offer an introduction to programming and physical computing for those students with a design background, and an exposure to design for those with a technical background, providing students the ability to merge and mix design competencies with programming and technologies.

CAS2 Designing Advanced Artifacts
The module investigates the relation between the human being and the development of new kinds of objects as well as the structuring of new relationships among human beings, objects and organizations through the use of information and communication technologies. The module gives to students the opportunity to delve into the conception and the development of cognitive and physical artifacts, considered as prosthesis able to extend the human action and communication.

CAS3 Designing Advanced Environments and Services
The module investigates human beings and their immersion in a specific physical context as well as one's involvement in new work sequences and processes. The module gives to students the opportunity to delve into the creation of environments able to define the spatial experience of people and into the strategic definition of new services and systems able to define new forms of socialization, exchange or business that satisfy emerging human needs.

Thesis Project Module
The thesis project module is organised in two parts dedicated to the development of the thesis project. The student has to identify a thesis topic and an internal or external professor to serve as thesis advisor. The student has to present the thesis project proposal to the Review Commission for evaluation and approval. After this step, the student has to develop the thesis project and present it to the Review Commission for the final evaluation.

CAS1
Interaction Design Fundamentals



Macchina Poetica, by Alessandra Angelucci and Aris Dotti, MAS 2015—2016

1.1 Digital Fabrication
Enrico Bassi, Marco Lurati (3 ECTS)

Description
The course aims at giving the basis of one of the most diffused and versatile 2D and 3D software Fusion 360 in order to create digitally designed objects that can be fabricated through fast prototyping machines. The focus of the course is placed equally on CAD theory, Fusion 360 lessons and practical exercises. The course starts with an overview on both the Computer Aided Design and the Fusion interface. Following the overview, students will design a small 2D file of low or intermediate complexity and prepare it for the laser cut and the CNC Router. The second step is to work on solids, meshes and surfaces for the 3D printers.

The combination of these technologies allows students to develop and prototype, quickly and effectively the physical part of complex and interactive projects.

Objectives
The main goal is to introduce students to 3D CADs and to explain the different possible approaches based on the desired result. The focus of the course are the useful applications this technologies have for an interaction designer (like simplify the hacking of existing objects or design new interfaces from scratch), that can be produced with innovative digital technologies, like laser cut machines, CNC routers and 3D printers.

Examination
The attendance at the course is mandatory to be awarded the ECTS. In order to be admitted to the examination, students must deliver the documentation and communication materials according to the documentation guidelines (see Guidelines for documentation booklet) within the appropriate deadline.

References
https://www.autodesk.com/products/fusion-360/overview
Supplementary references will be provided during the course.

1.2 Programming Interactive Objects 1
Matteo Loglio (2 ECTS)

Description
The workshop is an immersive experience in creative coding tools and methodologies, with a special focus on visual programming and interaction. The week is centered on introducing the Processing environment, a programming tool for artists and designers. At the end of the workshop, students will be able to ideate and develop interactive applications from the ground up.

Objectives
Goal of the workshop is to equip all the participants with a basic knowledge of programming practices, in general, and of the Processing framework, in particular. Each student should be able to read and write a very simple program, independently.

The Processing language is used during the course to introduce the building blocks of programming, such as variables, logic operators, loops, conditionals, functions, objects, etc.

Alternatives frameworks and environments will be explored, to provide students with a wider knowledge of the tools available today, for creative coding and prototyping.

Examination
Every student will present the projects developed during the course to the class: the ideation process, the technical approach and the presentation itself will be evaluated.

A written test may be combined with the presentation.

In order to be admitted to the examination, students must deliver the documentation and communication materials according to the documentation guidelines (see Guidelines for documentation booklet) within the appropriate deadline.

References
References will be provided during the course.

1.3 Programming Interactive Objects 2: Encode / Decode
Andreas Gysin (2 ECTS)

Description
During the workshop the students will explore different ways to encode / decode data and transmit it – not necessarily by limiting the transmission channel to the electronic domain. The main activity will be a guided experimentation with code. A specific assignment will be also given addressing the development of a final project.

Objectives
The main objective is to provide the students with a common base and basic knowledge in programming. At the end of the workshop every student should be able to write a simple program by himself/herself. Among the basic topics in programming (logic, loops, functions, etc), Processing's graphic API and the use of some libraries will be covered.

Different programming environments and paradigms could also be explored depending on the features and needs of the final projects.

Examination
Every student will present the projects developed during the course to the class: the concept, the techniques and the presentation itself will be evaluated.

A written test may be combined with the presentation.
In order to be admitted to the examination, students must deliver the documentation and communication materials according to the documentation guidelines (see Guidelines for documentation booklet) within the appropriate deadline.

References
Shiffman D., The Nature of Code, 2012
Free online version with updated code examples: http://natureofcode.com
Supplementary references will be provided during the course.

1.4 Designing Mobile Interfaces
Antonio De Pasquale, Laura Bordin (3 ECTS)

Description
After 10 years of the first iPhone release, the new ARkit Platform, opens a new era in the way we will experience in the future information, media, social networks and payments across the world. What platforms can we leverage when designing for mobile and what possibilities they provide us with? How to design business-critical processes and show relevant information on small screens? How can we extend the screen size using Augmented Reality & AI? In this intensive course we will learn how to design a mobile application: from defining its features, to creating a distinctive visual language to designing and prototyping a mobile User Interface.

Objectives
Students will be given a design brief and will be asked to design, prototype and test (with end-users) a mobile application.

Examination
Evaluation criteria are based on the quality of the following:
- Interaction Design (Information Architecture, User Flows, Wireframes)
- Visual Design (Moodboards, Visual Language)
- Prototype (Web or Platform specific).

In order to be admitted to the examination, students must deliver the documentation and communication materials according to the documentation guidelines (see Guidelines for documentation booklet) within the appropriate deadline.

Schedule
Day 1: Monday October 16 / Lugano / 10 AM – 4 PM
Lectures (background information): Mobile design principles, Mobile platforms: opportunities and challenges, Interaction Design basics, Visual Design basics.
Brief and discussion of the brief with the students.
Day 2: Wednesday October 18 / Milano / 1 PM – 6 PM
Lectures (background information): UX Introduction. Research review with the students.
Day 3: Friday October 20 / Lugano / 10 AM – 4 PM
Lecture (background information): Mobile prototyping.
Review of the initial Wireframes and Visual Language for each student.
Day 4: Tuesday October 24 / Lugano / 10 AM – 4 PM
Review of the mobile application prototype and end-user testing preparation.
Day 5: Friday October 27 / Lugano / 10 AM – 4 PM
Final presentation.

References
References will be provided during the course.

1.5 Creating Tangible Interfaces
Ubi de Feo (4 ECTS)

Description
Due to the growing pervasiveness of computing systems in our physical spaces and the huge amount of digital information that people access and manage daily, new kinds of interfaces are necessary to connect analog and digital worlds and allow people to easily interact with them. The course introduces to the design of tangible interfaces and to the creation of physical modalities and experiences for accessing and manipulating information through sensing artifacts. The course is based on the approach of "learning by doing": students learn how to design and implement tangible interfaces by developing basic prototypes with Arduino platform.

Objectives
The goal of the workshop is to learn how to design and implement tangible interfaces through systems based on sensors and actuators controlled by Arduino. The goal will be achieved by learning basic notions of physical computing and by learning how to handle different typologies of sensor and actuators and how to connect them through the Arduino platform.

Examination
The examination will be carried out through the evaluation of a final presentation and the commitment of the student during the course. In order to be admitted to the examination, students must deliver the documentation and communication materials according to the documentation guidelines (see Guidelines for documentation booklet) within the appropriate deadline.

References
Banzi M., *Getting Started with Arduino*, Sebastopol, (Make: Projects) O' Reilly, 2008.
Supplementary references will be provided during the course.

1.6 Open Lectures (1 ECTS)

Description
A series of open lectures that address issues of interest in interaction design. The lectures, taught by invited professors and professionals, have the goal of presenting theoretical knowledge and projects useful for the design thinking and practice.
The open lectures series includes also internal workshops and seminars.

Objectives
The main objective of the lectures is to provide knowledge in interaction design, from broad topics to specific areas.

Examination
The attendance at the lectures is mandatory to be awarded the ECTS.

References
References will be provided during the course.

CAS2
Designing Advanced Artifacts

Yola, by Nicolo Calegari, Snigdha Nanduri and Asanka Withanaarachchi, MAS 2015—2016

2.1 Designing Advanced Artifacts
Serena Cangiano, Lorenzo Romagnoli (6 ECTS)

Description
The rise of smart machines and new media ecology are digital transformation drivers that will have an impact on the future of education, production, innovation and work. These drivers can be compensated with the development of fundamental skills such as sense-making, computational and adaptive thinking and social intelligence. In this landscape, toys could play a pivotal role in addressing the development of relevant skillset in kids and young people. Next generation toys are smart, connected, interactive artifacts that can train next generations' brains through play and fun.

Objectives
The course focuses on the design and prototyping of next generations' toys, namely physical products that function as ludic interfaces that can introduce and transfer 21st Century skills to kids and young people.

During the course the students learn how to research and simplify a complex topic and to design tangible interactive products by defining the language of the interaction. They learn how to refine the product design by sketching in hardware, prototyping and creating a good storytelling. Final goal of the course is to release functioning prototypes and a documentation to describe the context of use and the interaction modalities.

Program
Week 1: Presentation sessions and external speakers contributions. Ideation phase, technology exploration and video-prototyping
Week 2: Presentation of preliminary projects, sketches and prototyping.
Week 3: Prototyping, refinement and documentation. Final presentation.

Examination
The work executed will be evaluated with the following criteria:
- 10% research
- 40% concept & design
- 30% execution, prototyping and product design
- 20% presentation and documentation

In order to be admitted to the examination, students must deliver the documentation and communication materials according to the documentation guidelines (see Guidelines for documentation booklet) within the appropriate deadline.

References
During the course a series of references will be provided to support the design and prototyping phase.

2.2 Web Platform for Interaction Designers - Designing Data Experiences
Fabio Franchino (5 ECTS)

Description
The Web Platform is playing a fundamental role in the digital world, providing a device-agnostic set of tools to allow the development of interactive software for a variety of digital endpoints. After two decades of evolution alongside the Web's progress, today designers and developers can work with a mature platform that is fluid by design and supports unprecedented and novel ways to craft interactive user interfaces.

The workshop will focus on the main Web Platform technologies as well as some open source frameworks and libraries, in order to provide a basis for building interactive digital products driven by data.

Objectives
Through the help of the popular javascript library d3.js, students will learn how to transform an opaque dataset into a structured representation, the first step to getting the sense of a data collection. They will learn the meaning of the different visual representation models, gathering the values as well as the drawbacks. Students will learn how to sketch, design and implement a data visualization project, starting from the analysis and data exploration phases to the final representation, exploiting the nature of the Web Platform that allows fast iterations on prototypes.

The Brief
Data is everywhere. Buildings are more and more connected producing a constant flow of raw information. Designing visualizations for spaces and locations, driven by real-time data flows, is going to become a necessity in the near future.

A project brief about visualizing information in public spaces will be given in order to guide the design phase.

Examination
Student evaluation will be based on the final project presentation, from concept idea to final implementation, passing through all the iterative prototyping phases.

In order to be admitted to the examination, students must deliver the documentation and communication materials according to the documentation guidelines (see Guidelines for documentation booklet) within the appropriate deadline.

Requirements
Attendees must have a basic understanding of HTML, CSS and Javascript paradigms that they can learn by following these online courses:
https://www.codecademy.com/learn/learn-html-css
https://www.codecademy.com/learn/learn-javascript

References
https://developer.mozilla.org/en/
http://d3js.org/
http://www.codecademy.com
Supplementary references will be provided during the course.

2.3 AI Machine made interactions - How to teach an old switch new tricks

Massimo Banzi, Matteo Loglio (3 ECTS)

Description

The acceleration of processing power, large amounts of data, open research papers are only few of the factors that contributed in making artificial intelligence one of the most hyped and interesting trends of the last few years. It runs silently in the majority of the devices we use every day. It listens and records our actions, learns our behaviors, predicts our intentions. All the big tech giants are racing to get a slice of the pie: only in the last year, millions of ai-powered assistants invaded our homes. There are many branches of AI where designers could have a great impact. So far the most obvious applications are conversational design, voice interfaces and natural language, but we are starting to move into more experimental directions. We can train machines to understand our movements, to see the world as we do, to create artworks, write poems and generate new languages; the choice of the right input data is the first challenge.

Objectives

Goal of the course is to design and prototype an advanced artifacts from one of the building blocks of interaction design: the switch.

The switch is not a product by itself but a silent functional component of more complex artifacts. In this workshop we want to glorify the switch: what if the switch was intelligent? What if a switch could learn? What if a switch could teach us something? What if a switch doesn't want to switch anymore? What if...?

This is the one-week challenge: make a switch that is able to learn and think and design the user experience around it.

The program schedules

1. Technology exploration and ideation phase
2. Prototyping sessions
3. Design iterations
4. Intermediate and final presentations

Examination

The work executed will be evaluated with the following criteria:

- 10% research
- 40% concept & design
- 30% execution, prototyping and product design
- 20% presentation and documentation

In order to be admitted to the examination, students must deliver the documentation and communication materials according to the documentation guidelines (see Guidelines for documentation booklet) within the appropriate deadline.

2.4 Interaction Design Seminars (1 ECTS)

Description
The course is organized into a series of seminars that address issues of interest in interaction design. The seminars, taught by invited professors and professionals, have the goal of presenting theoretical knowledge and experiences useful for the design thinking and practice.

Objectives
The main objective of the seminars is to provide knowledge in interaction design, from broad topics to specific areas.

Examination
The attendance at the seminars is mandatory to be awarded the ECTS.

References
References will be provided during the seminars.

CAS3
Designing Advanced Environments & Services

Inner Light, by Nicolò Calegari, Giulia Galli and Ginevra Rudel, MAS 2015—2016

3.1 Designing Advanced Environments
Bill Keays (5 ECTS)

Description
This course addresses the notion of interactivity as an immersive, environmental experience. Actions of cause and effect between subjects and objects extend to encompass setting, be it natural, urban, or architectural. Discussion on current practices, emerging technologies and social relevance work to inform students in the production of fully elaborated interactive concepts. This project-oriented course is framed by an agenda put forward by industry partner with emphasis on originality, thoroughness and demonstrability of work.

The Challenge/Objectives
Students are presented with a general theme that comprises environments, settings, and situations that are ripe for interactive intervention. The premise put forward is not purely an exercise in creative experimentation; it represents an actual current challenge or long-term objective from the course industry partner. Students are invited to apply their skills as artists, designers and programmers to produce finished concepts, prototypes and demos that meet the challenge. The industry partner may choose to showcase, or further develop selected works (in agreement with its creators), therefore placing great emphasis on the completeness and demonstrability of the work. This course presents a special opportunity for students to obtain broad exposure of their work.

Course Structure
This is a project-oriented course with supporting activities acting to inform and support the realization of the projects. Students and lecturer meet 3 times weekly for 4 hours over 4 weeks.

Day 1: Lecture and discussion of current art, techniques, theoretical backdrop.
Day 2: Special topic presentation OR open workshop.
Day 3: Presentation of student work, group review/critique and discussion.

Work Assignments
Students are required to undertake a single project over the 4-week period with emphasis on completeness, originality, and presentation quality. These are the 4-stages of the course.
Stage 1: Identify the aspect of the given design challenge you wish to address. Outline a solution and associated technology to address this challenge.
Stage 2: Define a detailed framework for your design solution and produce first draft of a design specification document while acquiring the resources required to realize your design.

Stage 3: Produce and present full rendition of what is proposed in Stage 2 in prototype/ demo format.
Stage 4: Present your work and deliver completed design specification.

Examination
The examination will be carried out through the presentation of the project and the evaluation of the prototype. In order to be admitted to the examination, students must deliver the documentation and communication materials according to the documentation guidelines (see Guidelines for documentation booklet) within the appropriate deadline.

Grading:
- Participation: 15%
- Stages 1, 2, & 3: 15%, 15%, 15%
- Stage 4: 40%

References
References will be provided during the course.

3.2 Designing Advanced Services
Laura Bordin, Antonio De Pasquale, frog team (5 ECTS)

Description
"Designing Connected Product Experiences"

Bots, conversational interfaces, and smart devices are the next disruptors in the next Service experience. How will human computer interaction and natural language processing affect how we communicate and interact with the brands we know and love?

How to design consistent physical and digital product experiences ensuring that the information provided to the user is always relevant, meaningful and actionable?

In this course we will learn how to design a service experience using AI & Machine learning across multiple form factors: from gathering insights directly from our target users, to identifying opportunity areas that satisfy unmet needs to generating ideas that lead us to a concept that will be developed and prototyped.

Objectives
Each workgroup will be asked to choose a specific opportunity space in a defined industry and shape a multi-touchpoint (e.g. Edutainment, Fashion industry) service to improve the life of the intended target users. Each workgroup will also be asked to design and prototype one (or more) of the service touch-points (e.g. web and/or mobile – wearable application).

Examination
Evaluation criteria are:
- Quality of design research (User Personas, Customer Journey, Opportunity Areas)
- Quality of the overall service concept (Ecosystem & Flows)
- Quality of the execution of the chosen touchpoint(s): product/visual/interaction design & prototype (Web and/or Mobile User Interface Design / Prototype)
- Quality of the prototype
- Quality of the presentation.

Schedule (26 February—23 March)
Day 1: Monday February 26 / Lugano / 10 AM – 4 PM
Lectures (background information): Competitive context, Primary & Secondary User Research, User Personas, Multi-channel Experiences, Customer Journey
Brief and discussion of the brief with the workgroups (opportunity area selection), user research planning & preparation
Day 2: Friday March 2 / Lugano / 10 AM – 4 PM
Review of competitive analysis (desktop research) to date
Review of user research plan and/or initial insights derived from initial user research
Day 3: Tuesday March 6 / Milano / 1 PM – 6 PM
Review of final competitive analysis (desktop research) & insights from user research
Discussion around initial service concept

Day 4: Friday March 9 / Lugano / 10 AM – 4 PM
Presentation of final User Research results & insights (User Personas, Customer Journey, Opportunity Areas) and Service Concept (Mission Statement, Target Users)
Day 5: Tuesday March 13 / Milano / 1 PM – 6 PM
Review of final Service Concept
Discussion around hero flows, touch-point design & focus (web and/or mobile and/or physical product)
Day 6: Friday March 16 / Milano / 1 PM – 6 PM
Review/workshop on initial touch-point detailed design (e.g. web/mobile/physical product user experience / user interface / interaction)
Discussion around evaluative research, user-tests and next steps.
Discussion around final presentation structure & narrative
Day 7: Tuesday March 20/ Skype Call / 1 PM – 3 PM
Review/workshop of touch-point detailed design & prototype(s)
Review of initial insights derived from evaluative user research, user-tests.
Review of final presentation structure & narrative
Day 8: Friday March 23 / Lugano / 10 AM – 4 PM
Final presentation

References
References will be provided during the course.

3.3 Web Platform for Interaction Designers - Prototyping Micro Interactions

Fabio Franchino (2 ECTS)

Description

The Web Platform is playing a fundamental role in the digital world, providing a device-agnostic set of tools that allow the development of interactive software for a variety of digital endpoints. After two decades of evolution alongside the Web's progress, today designers and developers can work with a mature platform that is fluid by design and supports unprecedented and novel ways to craft interactive user interfaces.

The workshop will focus on the main Web Platform technologies as well as some extraordinary available open source frameworks, in order to provide a basis for the building of interactive digital prototypes.

Objectives

Students will learn how to sketch user interactions within a browser, which allows fast-paced iterations of the creative process as well as testing the experience directly on the target device. During the course, students will learn how to exploits some javascript libraries in order to build working prototypes fast, the modern and effective way to design user interactions that really work.

Examination

Students' evaluation will be based on the final project presentation, from the concept idea to final implementation, passing through all the iterative prototyping phases.

In order to be admitted to the examination, students must deliver the documentation and communication materials according to the documentation guidelines (see Guidelines for documentation booklet) within the appropriate deadline.

Requirement

Attendees have a basic understanding on HTML, CSS and Javascript paradigms that they can learn by following these online courses:

- http://www.codecademy.com/tracks/web;
- http://www.codecademy.com/tracks/javascript.

References

https://developer.mozilla.org/en/
https://jquery.com/
https://greensock.com/
http://microinteractions.com/
Supplementary references will be provided during the course.

3.4 From Project Ideas to Market

Siegfried Alberton, Andrea Huber, Leandro Bitetti (inno3-DEASS-SUPSI) (2 ECTS)

Description

Entrepreneurship is a fundamental process that promotes innovation, growth at the corporate level as well as at the level of entire economic and social systems. It is also a process that leads to self accomplishment. There are many ways to support and promote this process. One of these is to discover potential business ideas and hence interesting business opportunities looking at market, social, technological, institutional and economic trends and needs. This is also a way to support another fundamental process which is the knowledge and technology transfer from Science to Business. Graduates and master students are key agents in this process. Some recent developments in the business entrepreneurship field are particularly linked to the general framework of the MAS in Interaction Design teachings. We particularly refer to the entrepreneur considered in a broader view as a sense-maker, as a language-maker, as a culture-maker and as a history-maker. That is why we do believe that there are good chances to find interesting entrepreneurial seeds in the MAIND students' projects, ideas or even dreams that deserve to be nurtured, supported and promoted throughout the module. The best Business Ideas will have the chance to be pitched at the Business Ideas events promoted by the federal Program CTI Entrepreneurship.

Objectives

At the end of the module, the participants should:

- Be able to discover Business opportunities
- Be able to write and describe a Business Idea
- Be able to write, describe and discuss a Business model
- Be able to know the main chapter of a Business plan and to write their own Business plan
- Be able to present and advocate their own business project

Examination

The attendance of the module is mandatory. As outcome of the course students are expected to understand the business side of a project and able to apply its basic concepts in their practical work. The certification of the module is made of two main parts: The Business Plan written report (50%) and the final Elevator Pitch (50%) of their own business Project.

Schedule (15 February—7 April)

Day 1: Tuesday, January 30 / Trevano / 08.40 AM – 12.00 AM

Lectures: A) About Entrepreneurship (entrepreneurship as an academic subject/ entrepreneurship, innovation and self-employment/ the two views of Business Entrepreneurship/ Start up of Entrepreneurial activities/Instruments to support entrepreneurship/ the entrepreneurial Ecosystem). B) How to discover a business opportunity.

Workshop: participants work on the discovery of Business Opportunities.

Day 2: Tuesday, February 6 / Trevano / 08.40 AM – 12.00 AM
Lectures: How to write a Business Idea.
Workshop: Writing one own Business Ideas.
Testimonials: Two Start up companies introduce themselves and their entrepreneurial experiences.
Day 3: Tuesday, February 13 / Trevano / 08.40 AM – 12.00 AM
Presentations: Students introduce their Business Ideas
Lectures: The Lean Business Model Canvas.
Workshop: From the Business Idea to the Business Model. Coached activities on the designing of a Business model.
Day 4: Tuesday, February 20 / Trevano / 08.40 AM – 12.00 AM
Coaching: Completing the Business Model
Day 5: Tuesday, February 27 / Trevano / 08.40 AM – 12.00 AM
Presentations: Participants introduce their Business Model.
Lectures: From Business Model to Business Plan (How to write a Business Plan/ Focus on marketing and financial aspects).
Workshop: Coached activity on the writing of a Business Plan (participants structure their Business Plan).
Day 6: Monday, March 5 / Trevano / 08.40 AM – 12.00 AM
Coaching: Writing the Business Plan
Day 7: Monday, March 12 / Trevano / 08.40 AM – 12.00 AM
Presentations: Participants present their Business Project through an Elevator Pitch.

References

Bjerke, B., (2013), *About entrepreurship*, Cheltenham UK & Northampton, MA, USA, Edwar Elgar.
Shane, S. (2003), *A General Theory of Entrepreneurship: The individual-Opportunity Nexus*, Cheltenham UK & Northampton, MA, USA, Edwar Elgar.
http://steveblank.com/tools-and-blogs-for-entrepreneurs/

3.5 Interaction Design Seminars (1 ECTS)

Description
The course is organized into a series of seminars that address issues of interest in interaction design. The seminars, taught by invited professors and professionals, have the goal of presenting theoretical knowledge and experiences useful for the design thinking and practice.

Objectives
The main objective of the seminars is to provide knowledge in interaction design, from broad topics to specific areas.

Examination
The attendance at the seminars is mandatory to be awarded the ECTS.

References
References will be provided during the seminars.

Thesis Project Module

Woo, by Nicolò Calegari, MAS 2015—2016

4. Thesis Project (15 ECTS)

The thesis project module is organised in two parts devoted to the development of the master thesis project. Participants are expected to identify a thesis topic, to write a short essay focusing on their research area, to select a thesis advisor, and to establish a network of people, institutions and companies, if necessary for the completion of the thesis project.

Participants have to present the thesis topic to the Review Commission for evaluation and approval. After this step, participants will develop the thesis project and present it to the Review Commission for the final evaluation.

Thesis Project Plan

The plan of activities listed below represents the necessary issues/item/points that participants have to develop for the completion and the dissertation of the thesis project. The plan is organised into three main parts: A. Thesis Project Definition; B. Thesis Project Development; C. Thesis Project Delivery.

A. Thesis Project Definition

1 Research Topic Definition

The following sections include mandatory material for the first deliverable. Participants can add sketches, images, videos, paper prototypes, etc. in order to better highlight the features of the research process or outcome.

1.1 Research Topic

The research topic has to outline the main theme of the thesis project and to briefly describe the area/domain of interest. A discussion of existing literature or a state of the art of current technology has to be provided (5'000-10'000 characters, spaces included).

1.2 Research Question and Hypothesis

The base of all further research steps is the definition of one or more research questions, as well as a research hypothesis.

Research question is the methodological point of departure of research: the research has to answer this question.

Research hypothesis is the statement created in order to speculate upon the outcome of a research or experiment.

Both research question and hypothesis must be tested at the end of the research phase to provide arguments and evidences on the completion of the research phase. (1'000-2'000 characters spaces included).

1.3 Research Aim

As a consequence of research question and hypothesis, participants are asked to describe what they want to find/prove through their research: the research aim. Insights on how these results will be reached are expected and they also concern the methodology employed. (2'000-5'000 characters spaces included).

1.4 Research Outcome
The research outcome is a critical description and motivation of the design solution adopted in order to answer the research question, be it an artifact, a service, an environment, or a mix of these. (2'000-5'000 characters spaces included).
1.5 References
The Project Definition includes lists of sources employed for defining the above mentioned sections (questions, hypothesis, aims and outcome). These sources typically take the form of book, film, website references or other specific items (i.e. products, applications, softwares, etc.). Discrimination among primary, secondary and tertiary sources is suggested.

B. Thesis Project Development
2 Analysis of the State of the Art
2.1 Topics and disciplinary areas
2.2 Existing/Future Design Solutions
2.3 Existing/Future Tools and Technologies (HW/SW)
2.4 Insights

3 Scenario Design and Concept Generation
3.1 Context/Domain Analysis, User Research and Opportunity Areas
3.2 Personas, Context Scenario and Requirements
3.3 Framework Definition, Concept Generation
3.4 Detailed Concept for Prototyping

4 Project Development
4.1 Initial Design and Prototype
4.2 Test and Iterative fine-tuning of the Prototype (continuous activity)
4.3 Detailed Design of: User Experience, System Behaviour, Interaction Modalities and User Interface
4.4 Detailed System Specifications
4.5 Hardware and Software Development
4.6 Usability Test and Evaluation Report
4.7 Final Product
4.8 Standard Project Description
(title, author, licenses, abstract, interface and interaction modality, technology, user experience, research and development context, main references)

C. Thesis Project Delivery

5 Thesis Project Deliverables

5.1 Thesis Project Book
The Thesis Project Book is to be page set according to the corporate image of the master programme. Standard files in Indesign format will be provided and checked by the Review Commission.

5.2 Thesis Project Prototype
A budget of 350.– CHF is available for each participant in order to buy materials or services for the development of the final outcome.

5.3 Thesis Project Video

5.4 Thesis Project Presentation

5.5 Thesis Project Exhibition

Faculty
Coordination

Massimo Botta
head

Massimo Botta holds PhD in Industrial Design and Multimedia Communication from the Polytechnic of Milan and he worked at Domus Academy Research Centre and at Philips Design as Senior Design Consultant. He carries on a theoretical and research activity in the field of interaction design, the design of new products and services, user centered interfaces (GUI, TUI, PUI), interaction modalities and techniques, knowledge organisation and information visualisation. He is the author of the theoretical book on computer-based systems Design dell'informazione. Tassonomie per la progettazione di sistemi grafici auto-nomatici (2006) and the editor of the books: L'ambiente dell'apprendimento. Web design e processi cognitivi (2006) with G. Anceschi and M. A. Garito; Multiple ways to design research. Research cases that reshape the design discipline (2009).
At SUPSI, he is the Head of the Master of Advanced Studies in Interaction Design and of the Laboratory of Visual Culture - Interaction Design Lab of SUPSI, where he leads applied research projects in the field of web and mobile services and applications, digital archives, graphical user interfaces and software design.

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Serena Cangiano
coordinator

Graduated in Communication Sciences and pursued a Master in the design of interactive applications at the University of Lugano. She collaborated on projects about virtual archaeology, interactive art and web design. She is currently carrying out projects of design research at the Laboratory of Visual Culture - Interaction Design Lab of SUPSI with a focus on the design of social media platforms and DIY design. She carries out didactical activities about interaction design and interactive installation prototyping within the bachelor programme in Visual Communication SUPSI and she collaborates on the organization of the Master and the workshops in Interaction Design SUPSI.

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Marco Lurati
assistant

Graduated in Micro-engineering at Bern University of Applied Sciences in Biel/ Bienne, Marco Lurati holds a Master of Advanced Studies in Interaction Design from the University of Applied Sciences and Arts of Lugano. As engineer he worked at Sensoptic SA in the production and quality control of optical sensors, as well as the design and customisation of production tools and mechanical and micro-mechanical manufaturing. He is currently working at the Laboratory of Visual Culture - Interaction Design Lab of SUPSI as scientific collaborator. He collaborates on the development of web and mobile applications and carrying out interaction design projects.

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Giovanni Profeta
assistant

Giovanni Profeta holds a Master Degree in Visual and Multimedia Communication at University Iuav of Venice.
He collaborated on projects about web design and digital publishing. At the Laboratory of Visual Culture - Interaction Design Lab of SUPSI he is carrying out projects of applied research, focused on data visualization and interaction design.
He also teaches interaction design at the Bachelor in Visual Communication.
Currently he is a PhD Candidate in Design at Politecnico di Milano.

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Teaching staff

Siegfried Alberton

Siegfried Alberton, in his position as professor of Economics of innovation, leads the inno3 Competence Centre (innovation, business and entrepreneurship) at the Department of Business Economics, Health and Social Care of the University of Applied Sciences and Arts of Southern Switzerland. He is the scientific responsible of the Master of Science in Business Administration with Major in Innovation Management. He studied at the University of Fribourg. His research interests, publications and service activity cover the fields of economics of innovation, entrepreneurship and entrepreneurial dynamics, regional economics, innovation and entrepreneurship policy, innovation and entrepreneurship metrics. He is part of local, national and international Boards like the CTI entrepreneurship and the GEM-Global Entrepreneurship Monitor.

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Massimo Banzi

Massimo Banzi is the co-founder of the Arduino project and has worked for clients such as: Prada, Artemide, Persol, Whirlpool, V&A Museum and Adidas.
He spent 4 years at the Interaction Design Institute Ivrea as Associate Professor.
Massimo has taught workshops and has been a guest speaker at institutions like: Architectural Association - London, Hochschule für Gestaltung und Kunst Basel, Hochschule für Gestaltung Schwwbisch Gmünd, FH Potsdam, Domus Academy, Medialab Madrid, Escola Superior de Disseny Barcelona, ARS Electronica Linz, Mediamatic Amsterdam, Doors of Perception Amsterdam.
Before joining IDII he was CTO for the Seat Ventures incubator. He spent many years working as a software architect, both in Milan and London, on projects for clients like Italia Online, Sapient, Labour Party, BT, MCI WorldCom, SmithKlineBeecham, Storagetek, BSkyB and boo.com.

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Enrico Bassi

Enrico Bassi is the coordinator of FablabItalia (www.fablabitalia.it), the brand new lab for digital fabrication based in Turin, established at Stazione Futuro, the Italian exhibition space dedicated to innovation, design and technology.
The goal of FablabItalia is to provide people with a space and equipment for free for realizing projects that are shared with a creative commons license.

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Leandro Bitetti

Leandro Bitetti is a lecturer-researcher at the inno3 Competence Centre (innovation, business and entrepreneurship) at the Department of Business Economics, Health and Social Care of the University of Applied Sciences and Arts of Southern Switzerland (SUPSI). He holds a Master of Science in Management with Major in Organizational Behavior from the University of Lausanne (HEC) and a Bachelor degree in Economics from the Università della Svizzera italiana, in Lugano. After some years working in the banking audit industry, he joined inno3 Competence Centre in January 2014. He works closely with several companies in Ticino. His main duties concern education, research and consulting activities in the field of innovation management, in particular in the area of Innovation Strategy, Business Modeling and Business Entrepreneurship.

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Laura Bordin

Laura Bordin is an Associate Creative Director at frog.
Her eclectic background in communication, visual and interaction design and her passion for in-the-field research allow her to design digital products and services that result in a relevant and meaningful experience for people.
While at frog, Laura worked in the fields of telecommunication, healthcare, financial services and media for brands like RCS, Sky, Condè Nast, and Roche.
Lately, she has started crafting training workshops to help organisation shifting from a traditional product-centric approach towards a more effective user-centric approach.
Since 2013, she has entered the world of education, collaborating with the most interesting University programs in Politecnico di Milano, SUPSI (Switzerland), Bocconi (Milan) and Digital Accademia (Venice).

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Ubi de Feo

Born in 1974, Ubi belongs to one of the most lucky, unique generations ever lived: part of a demographic which grew up without Internet, he slowly saw it appearing on computer screens, and gradually transitioned to a world in which connectivity lies in our pockets, on our wrists, in our fridge and many more connected devices. Ubi started taking stuff apart when he was 6, and this desire to discover the inner workings of objects has guided him throughout his whole life via hacking computers, engines, code and electronics. Armed with this curiosity he became interested in many aspects of computing and technology, as well as many other things "technical".
Ubi moved to Amsterdam in 2002 where he worked as a Creative Technologist for Wieden+Kenney. He supervised and/or developed projects for Nike, Nokia, GoreTEX, Heineken, Bottega Veneta, Mandarina Duck, Electronic Arts, MTV and many more. He currently teaches programming, electronics and other things to whomever wants to learn, often developing his own methods to explain really complicated things in a more tangible, down-to-earth fashion.
He does do not try to teach things he doesn't thoroughly understand, which often leads him to learn entirely new subjects in order to explain them to himself and others.
In his off-time (mostly when doing the dishes) he thinks about ways to improve things or invent new ones. He began experimenting with mobile devices in 2001, and internet connected objects in 2007.
Ubi loves talking about the future.

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Antonio De Pasquale

Antonio De Pasquale is an Associate Creative Director in Frog specializing in digital user experience and service design. He believes that designing the interaction is the most important part in communication and is fascinated by how you can communicate through movement and gestures. He has worked on numerous digital projects ranging from the field of web-tv, e-commerce, healthcare, online newspapers, corporate website to mobile and tablet applications and he participated in teaching activities at SUPSI, IED, Politecnico di Milano and Digital Accademia. He is also a speaker at conferences like IXDA, SXSW, CodeMotion, APCHI and Social Media Week, and he is a certified Mentor of Interaction Design Foundation and a Jury Member of the international web design awards platform CSSDA.

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Fabio Franchino

Fabio is a computational designer and a founding partner at ToDo. He has always been involved in creative processes, ranging in fields from music to design, passing through performing and generative arts. One day he discovered the potential of programming as a medium and unconventional tool for his creative purposes. He explores ideas through evolving processes, often finding unexpected, meaningful outcomes and new aesthetics. After gaining senior experience with ActionScript and Processing, he has been exploring the Web Platform, trying to exploit the creative potentials of that platform. He has taught at several institutions and has held workshops in his field of expertise; he also organized the first Italian event devoted to computational practices in art and design.

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Andreas Gysin

Andreas Gysin was born in Zurich, he lives and works as graphic and interaction designer between Berlin and Lugano. Writing custom programs is part of his design process independently of the output medium. When not busy on projects he teaches interaction design and programming at SUPSI, Lugano and ECAL, Lausanne, and in workshops worldwide.

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Laura Licari

Laura is Creative Director at frog Milan. Bachelor of Design at Politecnico di Milano, awarded in 2012 by the ADC in the category digital-editorial art direction, in the last 10 years Laura has been working as UX designer and communication expert leading brand and digital communication projects for international clients in various fields: from fintech to consumer goods, from entertainment&media to fashion.
Laura is currently editorial director for the digital strategy magazine Lift-mag.com. Specialties: communication design, art direction online and offline, interaction design, brand and corporate identity design, user experience strategy, service design, design research.

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Matteo Loglio

Matteo Loglio is a designer and creative technologist working at Google Creative Lab and at the University of the Arts, London. He co-founded the ed-tech startup Primo Toys and his work was exhibited at the MoMA NY, the MIT and the V&A.

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Andrea Huber

Andrea Huber is a lecturer-researcher at the inno3 Competence Centre (innovation, business and entrepreneurship) at the Department of Business Economics, Health and Social Care of the University of Applied Sciences and Arts of Southern Switzerland (SUPSI). He obtained a Master of Science in Business Administration with Major in Innovation Management from SUPSI. His research interests, publications and service activity are in the areas of innovation, entrepreneurship and entrepreneurial dynamics, especially at the meso-economic level (local and regional development).

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Bill Keays

Bill Keays holds a Master of Science in Media Arts and Sciences from the Massachusetts Institute of Technology (M.I.T.), USA, as well as a Bachelor of Fine Arts Summa Cum Laude and a Bachelor of Science in Computer Science from the University of Ottawa, Canada.
His early professional experience in the IT industry was fused with his artistic practice in sculpture and photography into a career as an interactive media artist-technologist. This was put into practice at the Fantastic Corporation, a multimedia start-up based in Switzerland, where he founded and managed a new media Research and Prototyping unit; and later as Creative Director of Virtango, a body-centric interactive media design company.
Following this, after spending five years as Science and Technology Advisor at Cirque du Soleil, facilitating the transition of new technologies into Cirque du Soleil productions, he has undertaken a bold new challenge at Verity Studios in Zurich driving creative projects using drone swarms as an expressive medium. His work has been extensively viewed and experienced globally.

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Lorenzo Romagnoli

Lorenzo Romagnoli is an interaction designer, with an expertise in digital media, physical computing and digital fabrication Together with Enrico Bassi, he was a member of the team that founded and ran Italy's first Fablab in 2011.
From 2012 to 2014, Lorenzo returned to school to pursue a master's in Design for Interaction at the Delft University of Technology (TU Delft) in the Netherlands. Here, he designed a system for simplifying the design and prototyping of connected objects.

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University of Applied Sciences and Arts of Southern Switzerland
Department for Environment Constructions and Design
Interaction Design Lab

Campus Trevano

Bulding A
Atelier, level -1
FabLab, level -1
Rooms A004, A005
Library, level -1

Bulding B
Photo shooting studio
Canteen
Cafeteria

Building D
Room 201, faculty offices