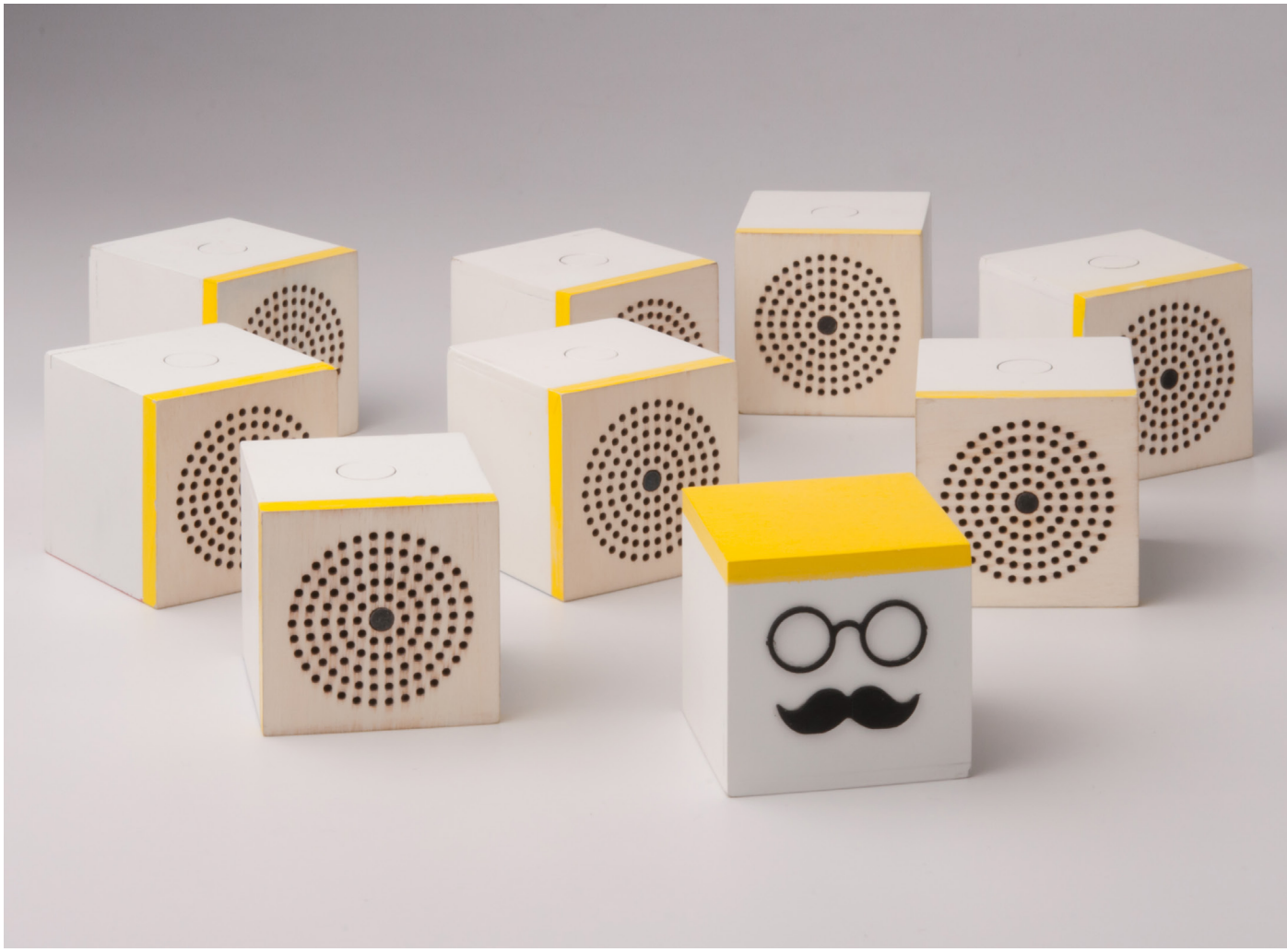
University of Applied Sciences and Arts of Southern Switzerland
Department for Environment Constructions and Design

SUPSI

Master of Advanced Studies in Interaction Design 2015–2016

Designing Advanced Artifacts, Enviroments and Services



SUPSI DACD LCV
Campus Trevano
CH-6952 Canobbio

Lugano, September 14th 2015

cover image

Toot by Federico Lameri,
Interaction Design Awards 2015
(Best in Category Expressing).

table of contents

MAS Program 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:

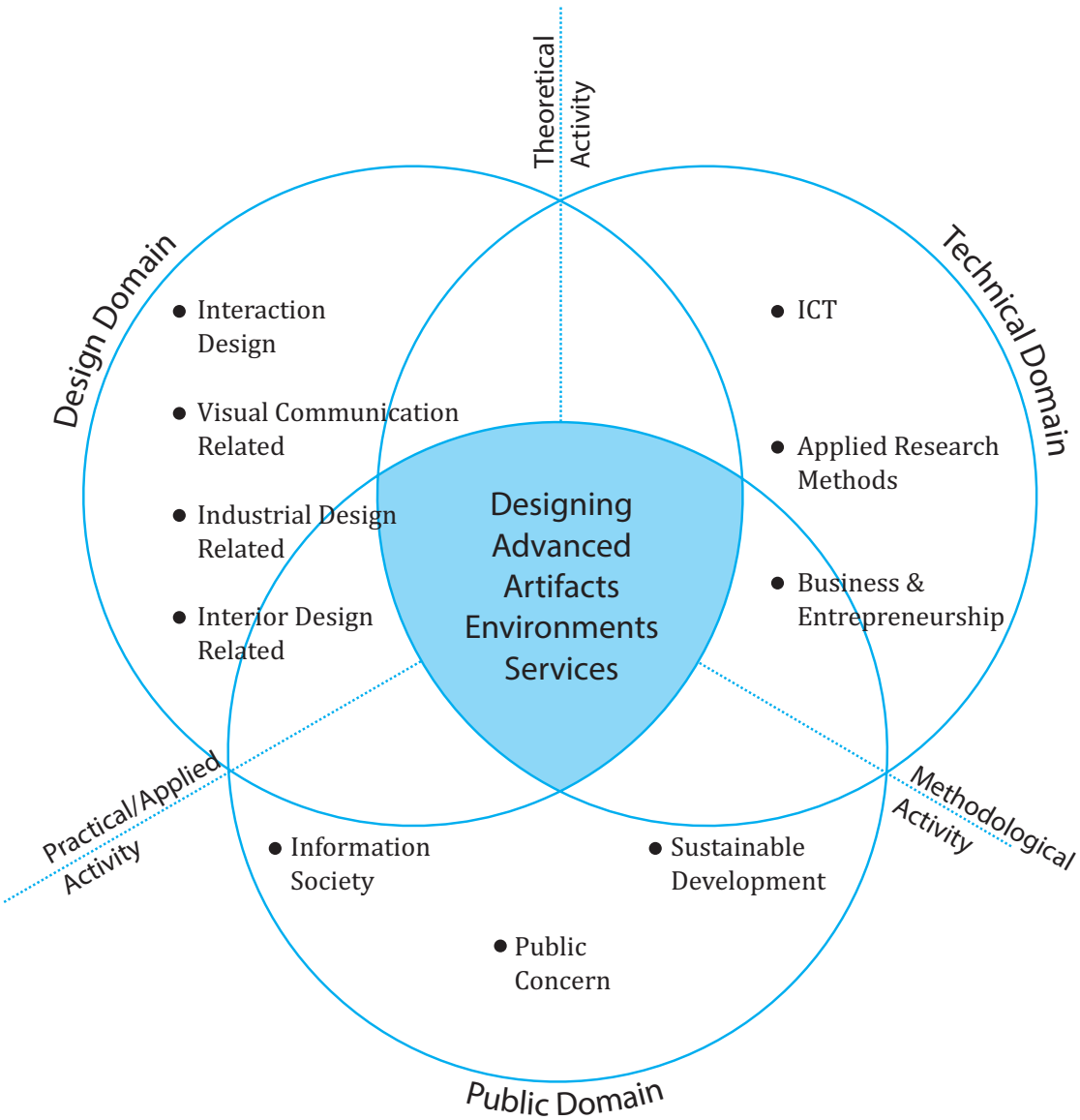
1. the Design Domain: interaction design disciplines and knowledge related to the wide field of design, such as the Visual Communication field, the Industrial Design field, the Interior Design field, as well as new fields, such as Services Design, Open Design, etc.;
2. the Technical Domain: composed 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.

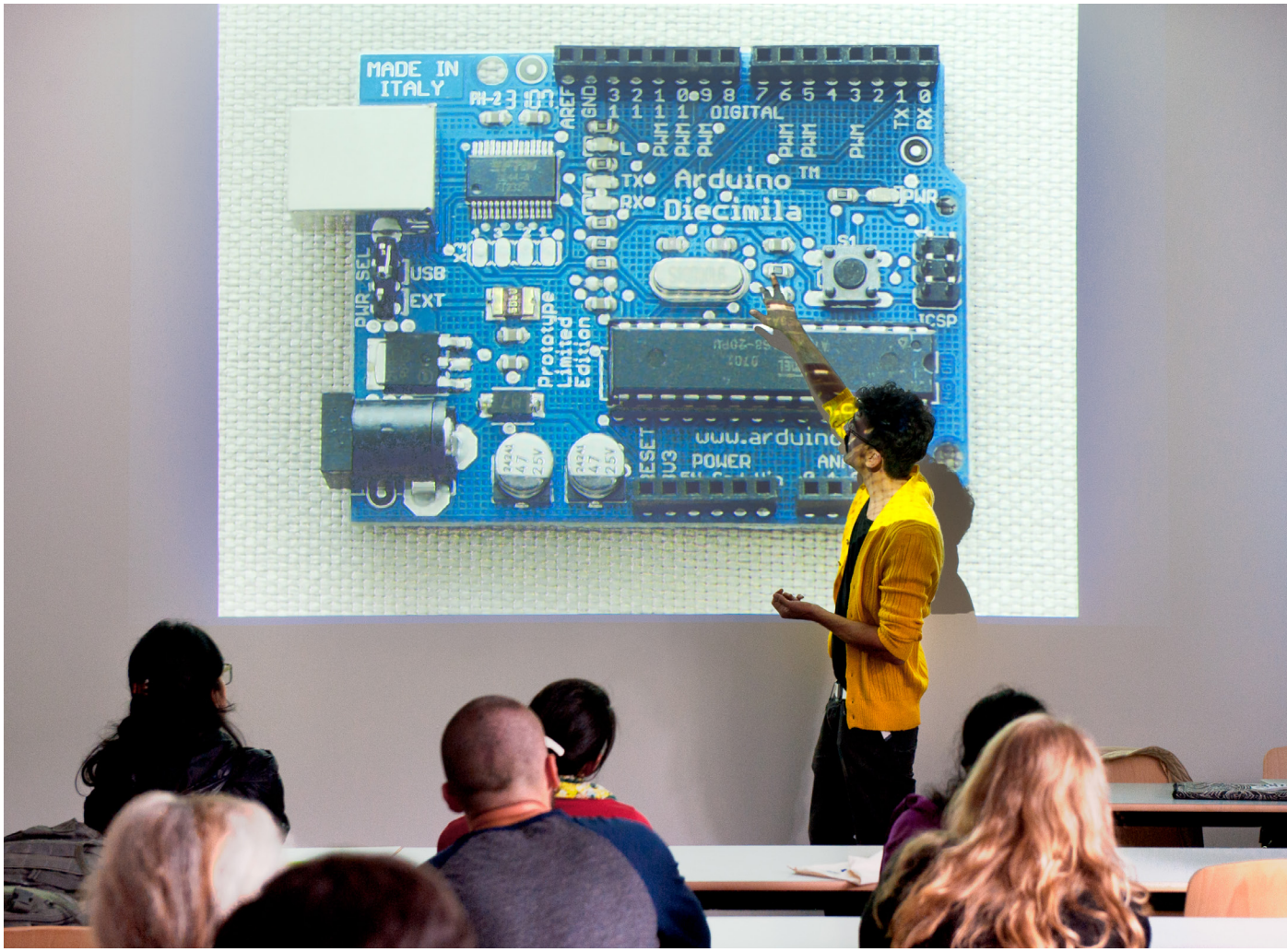
CAS1 Interaction Design Fundamentals
The module offers an overview of the interaction design field through theoretical and methodological courses and a series of workshops that have the purpose to create a common background for students coming from different design fields, as well as from the computer 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



1.1 Programming Interactive Objects 1 & 2
Andreas Gysin (4 ECTS)

Description
Aim of the two workshops is to give students an introduction to code with special focus on graphics programming and interactivity.

During the first week the students will learn the basics of the Processing environment and to write their first sketches. A project assignment will be given and students will have to develop one (or more) concepts starting from an idea and then try to implement it.

The second week will explore strategies on how to structure code for more complex programs. A new project assignment will be given and the students will be asked to provide a working prototype.

Objectives
The main objective is to give all the students a common base and basic knowledge in programming. Every student should be able to write a very simple program by himself/herself.

Among the basic topics in programming (logic, loops, functions etc), Processing's graphic API will be covered. Different programming environments and paradigms could also be explored, based on the needs of specific 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
D. Shiffman, *The Nature of Code: Simulating Natural Systems with Processing*, 2012,
Free online version with updated code examples: www.natureofcode.com
Supplementary references will be provided during the course.

1.2 Digital Fabrication
Enrico Bassi (3 ECTS)

Description
The course aims at giving the basis of one of the most diffused and versatile 2D and 3D software Rhinoceros V5 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, Rhinoceros lessons and practical exercises. The course starts with an overview on both the Computer Aided Drafting and the Rhino 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 students will be introduced also to a number of interesting plug-ins that help to work better on prototyping, freeform design or parametric design.

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
http://www.rhino3d.com/download
http://www.rhino3d.com/download/rhino/5.0/UsersGuide
http://www.rhino3d.com/tutorials
Supplementary references will be provided during the course.

1.3 Designing Mobile Interfaces
Antonio De Pasquale, Laura Licari (3 ECTS)

Description
Since the introduction of the iPhone in 2007 and the widespread of high-speed 3G mobile networks, smartphones have become a primary way to access information and services like 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?

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: Tuesday October 20 / 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: Friday October 23 / Lugano / 10 AM – 4 PM
Lecture (background information): Mobile prototyping.
Review of the initial Wireframes and Visual Language for each student.
Day 3: Tuesday October 27 / Milano / 1 PM – 6 PM
Review of the mobile application prototype and end-user testing preparation.
Day 4: Friday October 30 / Lugano / 10 AM – 4 PM
Final presentation.

References
References will be provided during the course.

1.4 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.

1.5 Open Lectures (1 ECTS)

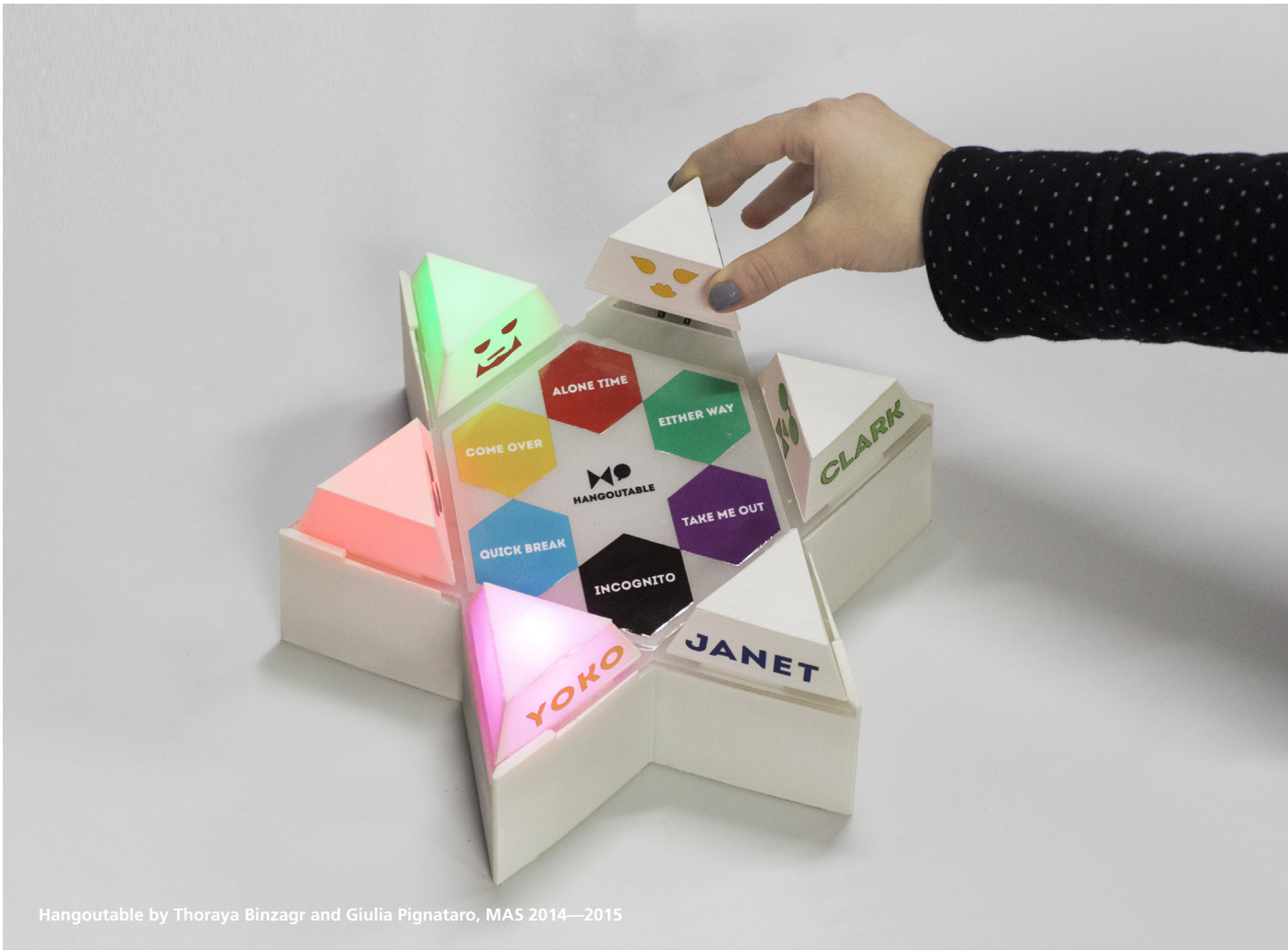
Description
A series of open lectures that address issues of interest in interaction design. The lectures, taught by invited professors and professionals, have the goal of presenting theoretical knowledge and projects useful for the design thinking and practice.
The open lectures series includes also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



Hangoutable by Thoraya Binzagr and Giulia Pignataro, MAS 2014—2015

2.1 Designing Advanced Artifacts

Dario Buzzini, Serena Cangiano, Lorenzo Romagnoli (6 ECTS)

Description

Translating means literally the rendering of words and texts from a language into another. Technology enhanced products of our everyday life can act as effective translators of physical and digital realities by simplifying complex phenomena, human behaviours and feelings, by converting spaces into measurable units, by visualizing data and concepts. Designing advanced "artifacts that translate" entails the skill of defining a simple language that make understable the interaction between people and the artifacts itself in a specific context. The course focuses on the process of crafting new kinds of objects through the design of such simple languages that enable the translation experience through a tangible interactive product.

Objectives

The course focuses on the design and prototyping of physical products that function as translators that are artifacts capable of simplifying and making understandable the interactions with them and with the space in a specific context of use.

During the course the students learn how to design tangible interactive products by defining the language of the interaction and 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.

Examination

During the course a dedicated website will be set up for the communication of the course activities and the final projects. The level of refinement of both prototype and documentation will influence the final evaluation of the projects.

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 Think Real, Design Wonder
Innocenzo Rifino, Diego Rossi, HABITS team (3 ECTS)

Description
Today design practice in the making of traditional physical products faces the emerging pervasiveness of computing, interfaces and services. The knowledge in CAD/CAM, rendering, animation is no longer enough for creating successful products. Why? Because designers design wonder experiences more than products. Contemporary production expresses multi-level complexity and behaviors. The most effective process in product design is prototyping both the mechanics and electronics of tangible artifacts: only working prototypes can proof the holistic quality of the design and motivate stakeholders in supporting designers' ideas.

In this course students will practice together how to go from an idea to a proof of concept. Students and lectures will share the pragmatic knowledge needed to accomplish a specific task. Our team at HABITS has developed a specific open source board (Arduino programmable) to be implemented in both prototyping and production phases. The board is the core of DIGITAL HABITS products (www.digitalhabits.it) and it will be used during the course to support students in making their ideas real.

Objectives
Students, working in teams, will be asked to quickly make ideations, than deeply and effectively prototyping them. The exercise will be conducted on a specific product category in order to focus the process and the involved knowledge. The goal is to make a working prototype.

Course structure
Day 1: Monday December 14 / Lugano / 10 AM – 4 PM
Lectures (background information): introduction of case studies.
Brief presentation and discussion of the brief with the teams.
Teams do research for inspiration.
Groups define concepts.
Review and selection of the possible concepts.
Day 2: Tuesday December 15 / Lugano / 10 AM – 4 PM
Discussion with the teams and detailed description of the key points of the concept to be developed.
Teams start 3D modelling and engineering the prototype.
Review and finalization of the 3D shape.
The teams prepare the construction drawings.
Day 3: Wednesday December 16 / Milano / 10 AM – 4 PM
The teams start the construction of the prototypes and the programming of the board.
Day 4: Thursday December 17 / Lugano / 10 AM – 4 PM
Teams finalize the construction and the software.

Day 5: Friday December 18 / Milano / 10 AM – 4 PM
Refinement of the prototyping work.
Final presentation

Examination
Evaluation criteria:
- Quality and originality of the concept;
- Quality of the prototype and how it works well.

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.

2.3 Web Platform for Interaction Designers (part 1) Designing Data Experiences

Fabio Franchino, Giorgio Olivero (5 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 progresses, 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, in order to provide a basis for building interactive interfaces.

Objectives

Through the help of the popular javascript library d3.js, students will learn how to transform an opaque dataset into a structured representation which is the first step to get 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.

Requirements

Attendees must have a basic understanding of 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

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.

References

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

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

Yu San by Ilaria Baggio and Lucia Rabago, MAS 2013—2014

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

Description
"Digital service design for multi-touchpoint ecosystems"

In today's connected world, digital services are no longer confined within a single product but span across a variety of devices ("touchpoints") like mobile phones, tablets, TVs, notebooks and wearable devices that follow the user throughout their day: at home, at work and on the go.

How to design digital services that deliver consistent experiences in very different contexts and through different touchpoints? How to ensure that the information provided to the user is always relevant, meaningful and actionable?

In this course we will learn how to design a multi-touchpoint digital service: 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. web, mobile, TV, wearable) 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 touchpoints (e.g. web and/or mobile 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.

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 February 1 / 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 February 5 / 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 February 16 / Milano / 1 PM – 6 PM
Review of final competitive analysis (desktop research) & insights from user research.
Discussion around initial service concept.
Day 4: Friday February 19 / 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 February 23 / 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 February 26 / 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: Monday February 29 / Skype Call / 1 PM – 3 PM
Day 8: Wednesday March 2 / Lugano / 10 AM – 12 AM
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 9: Friday March 4 / Lugano / 10 AM – 4 PM
Final presentation.

References
References will be provided during the course.

3.2 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 a contest-structured agenda put forward by an 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 may represent an actual long term objective from the industry partner. Students are challenged first to identify and define intervention zones and the current or emerging technologies that would support them, and then to apply their skills as artists, designers and programmers to produce finished concepts, prototypes and demos.

The challenge is put forward as a contest with rewards for the best work in terms of originality and relevance. 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: Guest presentation or open workshop.
Day 3: Presentation of student work, group review/critique and discussion. Work Assignments.

Work Assignments
Students are required to undertake a single project in four one-week stages. Each stage must result in finished work with emphasis on completeness, originality, and presentation quality.
Stage 1: Identify an emerging technology or phenomenon and demonstrate or illustrate its applicability relative to the course theme.
Stage 2: Define a detailed application of the technology or phenomenon identified in Stage 1 to the course theme and propose through demonstration or illustration the objec-

tive for the final work
Stage 3: Produce and present full rendition of what is proposed in Stage 2 in preliminary prototype/demo what stage.
Stage 4: Produce and present final and finished rendition of project. Note: By default, students shall be expected to work independently, however proposals for group work will be considered.

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.

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

References
A Touch of Code: Interactive Installations and Experiences, R. Klanten, S. Ehmann, L. Feiress, Die Gestallen Verlag, 2011.
ART+COM: Media Spaces and Installations, J. Sauter, S. Jaschko, J. Angesleva, Gestalten, 2011.
Designing Interactions, B. Moggridge, MIT Press, 2007.
Flexible: Architecture that Responds to Change, R. Kronenburg, Lawrence King Publishers, 2007.
Form+Code in Design, Art, and Architecture, Princeton Architectural Press, 2010.
Interactive Architecture, M. Fox, M. Kemp, Princeton Architectural Press, 2009.

3.3 Web Platform for Interaction Designers (part 2) 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 progresses, 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 main Web Platform technologies as well as some extraordinary available open source frameworks, in order to provide a basis to the building of interactive UI 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.

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.

Examination

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

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://developer.mozilla.org/en/
https://angularjs.org/
http://ionicframework.com/
http://www.codecademy.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

Schedule

Day 1: Monday, February 15 / 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: Monday, February 22 / 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: Thursday, March 3 / 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: Thursday, March 10 / Trevano / 08.40 AM – 12.00 AM
Coaching: Completing the Business Model.
Day 5: Thursday, March 17 / 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: Thursday, March 24 / Trevano / 08.40 AM – 12.00 AM
Coaching: Writing the Business Plan.
Day 7: Thursday, April 7 / Trevano / 08.40 AM – 12.00 AM
Presentations: Participants present their Business Project through an Elevator Pitch.

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.

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/
Supplementary references will be provided during the course.

3.5 Interaction Design Seminars (1 ECTS)

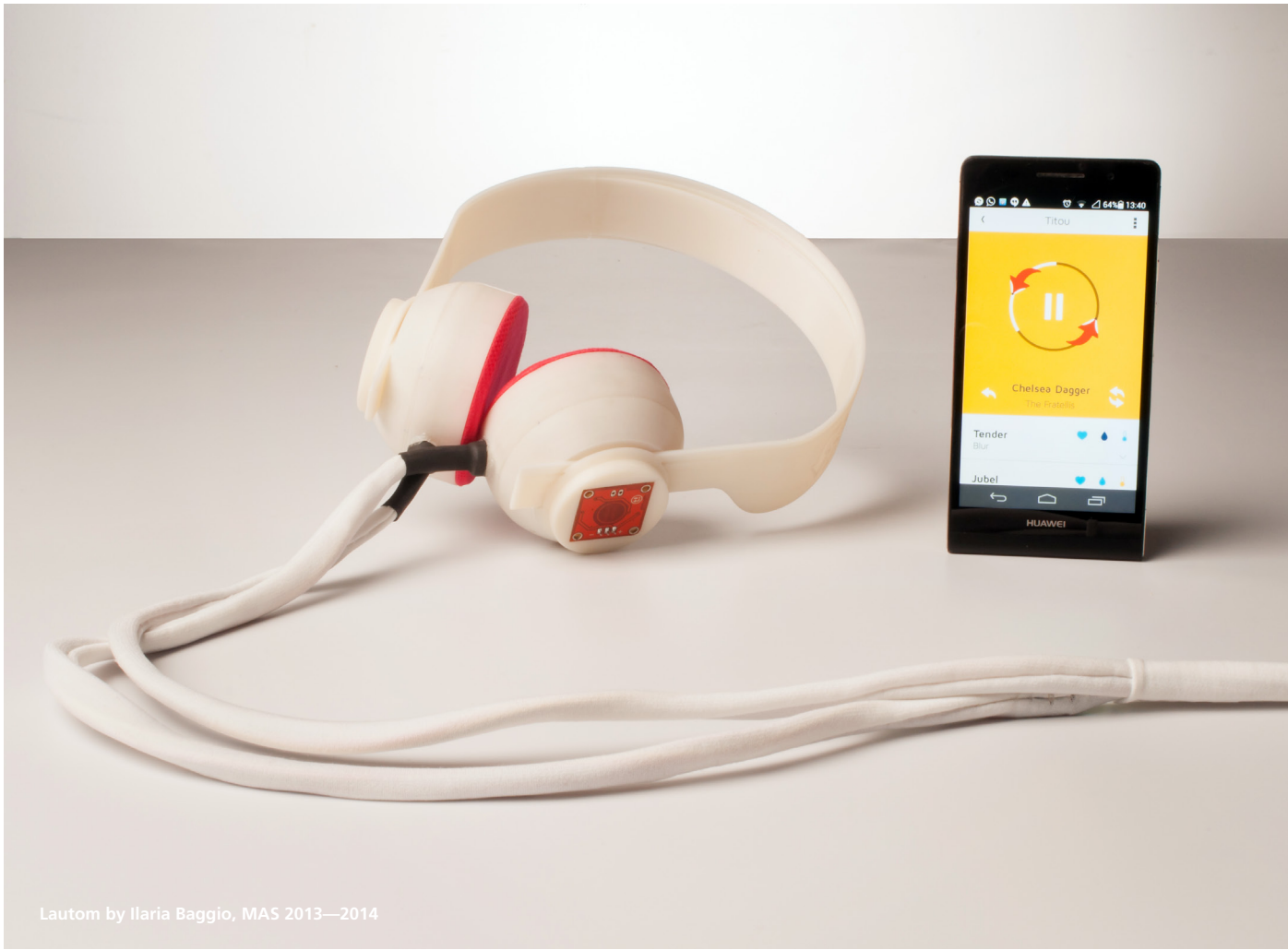
Description
The course is organized into a series of seminars that address issues of interest in interaction design. The seminars, taught by invited professors and professionals, have the goal of presenting theoretical knowledge and experiences useful for the design thinking and practice.

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



Lautom by Ilaria Baggio, MAS 2013—2014

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.

ph +41 (0)58 666 63 94
@ massimo.botta@supsi.ch

Davide Fornari
coordinator

Davide Fornari holds a PhD in Design sciences from University Iuav of Venice and is a tenured teacher researcher at the Laboratory of Visual Culture - Interaction Design Lab of SUPSI, in Lugano, where he teaches Interaction design and History of graphic design.
He edited the Italian translation of Heinrich Wölfflin's *Prolegomena to a Psychology of Architecture* (Milan 2011) and the collection of essays *Estetiche del camouflage*. In 2012 he authored the essay *Il volto come interfaccia*.
He is the coordinator of the research project *Mobile A2K*: Culture and Safety in Africa on the impact of public art on urban security in three African cities (Douala, Johannesburg, Luanda), financed by the Swiss Network for International Studies.

ph +41 (0)58 666 62 85
@ davide.fornari@supsi.ch

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.

ph +41 (0)58 666 62 85
@ serena.cangiano@supsi.ch

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.

ph +41 (0)58 666 63 82
@ marco.lurati@supsi.ch

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 web design at the Bachelor in Visual Communication.
Currently he is a PhD Candidate in Design at Politecnico di Milano.

ph +41 (0)58 666 63 82
@ giovanni.profeta@supsi.ch

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 and Social Science 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 Swiss Start up Monitor, the CTI entrepreneurship, the GEM-Global Entrepreneurship Monitor.

@ siegfried.alberton@supsi.ch

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.

@ enrico@enricobassi.com

Leandro Bitetti

Leandro Bitetti is a Scientific Collaborator at the inno3 Competence Centre (innovation, business and entrepreneurship) at the Department of Business and Social Science 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 research and consulting activities in the field of innovation management, in particular in the area of Open Innovation, Business Modeling and Organizational Behavior.

@ leandro.bitetti@supsi.ch

Laura Bordin

Laura Bordin is a senior interaction designer 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 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 collaborated with the most interesting University programs in Politecnico di Milano, SUPSI (Switzerland), Bocconi (Milan) and Digital Accademia (Venice).

@ laura.bordin@frogdesign.com

Dario Buzzini

Dario Buzzini is a Design Director in IDEO's New York office. His day-to-day job involves consulting and helping Fortune 500 clients to address complex challenges related to interaction design, from telecommunications and financial services to automotive and consumer electronics products. Over the past eight years, Dario has collaborated with multiple international companies, including Artemide, AT&T, Eli Lilly, Fiat, Ford, Motorola, Novartis, Philips, Prada, Tecno, and Telecom Italia.
Dario has a deep interest in physical grammar, formal language, design technology, and social interactions. As a product and interaction designer, he focuses on design speculations and what he calls "behavioral objects": those that explore, challenge, or emphasize specific interactive modes or behaviors. As an educator, he has taught and lectured in various universities in Europe, including Politecnico di Milano and Interaction Design Institute Ivrea in Italy and Umea Institute of Design in Sweden. Dario holds two master of science degrees: one in industrial design from the Politecnico di Milano and the other in interaction design from the Interaction Design Institute Ivrea.

@ dariobuzzini@gmail.com

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.

@ me@ubidefeo.com

Antonio De Pasquale

Antonio De Pasquale is a Senior Interaction Designer and information architect in Frog specializing in digital user experience. 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 and Politecnico di Milano.

@ antonio.depasquale@frogdesign.com

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, recently he has been exploring the Web Platform, trying to discover further creative potentials. He has taught in 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.

@ ff@todo.to.it

Andreas Gysin

Andreas Gysin studied micro technology at the Swiss Federal Institute of Technology Lausanne and Visual communication at SUPSI, the University of Applied Sciences and Arts of Southern Switzerland, where he graduated as designer in 2000.
He is teaching on interaction design since 2004 in both Universities of Lausanne and Lugano focusing on interactivity and programming. He his active as freelancer designer and in giving lectures, animating workshops, setting up events and festivals, creating installations and performances in festivals, spaces of public use as airports and waste incinerators or private buildings.

@ andreas@ertdfgcvb.ch

Laura Licari

Laura is an Associate Creative Director at frog Milan. Bachelor of Design at Politecnico di Milano, awarded in 2012 by the ADCI in the category digital-editorial art direction, in the last 10 years Laura has been working as visual designer and communication expert leading brand and digital communication projects for clients like Al Jazeera, Sky, HP, Condè Nast, Novartis, Unify, Allianz, Maserati, INGDirect, Seat.
Laura is currently official Creative Mornings host for Milan and editorial director for the digital strategy magazine Lift-mag.com.

@ laura.licari@frogdesign.com

Andrea Huber

Andrea Huber is teacher-researcher at the inno3 Competence Centre (innovation, business and entrepreneurship) at the Department of Business and Social Science 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).

@ andrea.huber@supsi.ch

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.
He is currently the Science and Technology Advisor at Cirque du Soleil, now the world's largest theatrical production company. His main task is to invent creative applications with emerging technologies from research labs and to facilitate the transition of those technologies into Cirque du Soleil productions. As a result his work has been extensively viewed internationally. He also lectures, organizes workshops, and participates in exhibitions and academic conferences.

@ billkeays@billkeays.com

Giorgio Olivero

Giorgio is Design Director at TODO, a design studio and innovation consultancy based in Italy. At TODO he has led projects for clients such as Arduino, Bank of Italy, Nike, Fiat, Doha Film Institute, MTV and many other companies, museums and institutions. His works embrace interactive experiences as main design medium, as well visual and strategic design.
Giorgio's received his Master's Degree in Interaction Design from the Interaction Design Institute Ivrea. As an educator, he has been teaching at IUAV Venice, VCU Qatar, Siena University and SUPSI.

@ g.olivero@todo.to.it

Innocenzo Rifino

After graduating in Industrial Design in 2000 at the Polytechnic of Milan, began his career in product design department at Panasonic in Osaka. He completed several years of experience in interaction design, and in 2005 he founded the HABITS studio in Milan (www.habits.it). Adds the academic activities at the professional. He holds courses at the Politecnico di Milano, Politecnico di Torino, the Domus Academy, the new Academy of Fine Arts in Milan. His works have been exhibited at the Triennale in Milan, the Louvre museum in Paris, the National Art Center in Seoul, the Today Art Museum in Beijing, the Italian Institute of Culture in Madrid. He received international awards such as Design Plus and Red Dot.

@ irifino@habits.it

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.

@ l.romagnoli@arduino.cc

Diego Rossi

Designer, he graduated in Industrial Design at the Politecnico di Milano, since 2001 working with LucePlan on the development of new projects, his work has received an honorable mention at the Compasso D'Oro 2004, and four Design Plus awards in 2002, 2006, 2008, and 2011. Co-founder in 2006 of the new technical lighting company called "Elementi di LucePlan", artdirector and technical coordinator. In 2005 he founded the HABITS studio in Milan (www.habits.it). The most recent projects have been exhibited at the "Triennale di Milano", the Today Art Museum in Beijing, the Italian Institute of Culture in Madrid, the traveling exhibition "Luxury in Living" promoted by the Italian Presidency of the Republic. Since 2006 he has taught at the Polytechnic of Milan and the New Academy of Fine Arts in Milan.

@ drossi@habits.it

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