

INTERACTIVE AND DIGITAL TOOLS

IE University

Professor: **MARÍA ESTEBAN CASAÑAS**

E-mail: mestebanc@faculty.ie.edu

Academic year: 22-23

Degree course: SECOND

Semester: 1º

Category: COMPULSORY

Number of credits: 6.0

Language: English

PREREQUISITES

SUBJECT DESCRIPTION

Welcome to Interactive + Digital Tools, a course that will introduce you to digital tools and emerging technologies relevant to contemporary design practice. In this course you will learn how to use software in your design process and the role that technology plays in creativity and visual communication. This course is structured in four units with specific deliverables at the end of each unit. The course will consist of project-based explorations that will challenge you to re-think the way you approach digital and interactive tools. You will be asked to navigate the space between technology and design.

Given the context of the IE School of Architecture & Design which places emphasis on excellence in design and innovation, the relation between these two concepts will be foregrounded continually. The course aims to offer critical acumen in respect of interactive and digital tools through creative design work. A sequence of lectures, workshops, ideation sessions, desk crits, and studio reviews will provide a framework for you to develop your design projects. This classroom will be considered a laboratory where experimentation is encouraged.

In order to prepare for each class, weekly course assignments are to be completed and posted on MIRO prior to our class meetings. This will help you engage more in the class discussions, as well as understand your classmates' take on each assignment. As an instructor, it will give me the chance to review your work prior to our class.

Even though you are not required to literally carry all the lessons and findings from one exercise to the other, the sequence is designed to progressively engage with topics, references, and the local conditions necessary to understand the scope and complexities of the larger project. The assignments are designed to help you propel your project forward while exploiting the collective intelligence of the entire class. That is why active participation is essential in the classroom, accounting for 20% of the final grade.

Studio Culture: Work in the design studio will build sequentially. Therefore, your commitment to continual development on a daily basis is of paramount importance. I want to emphasize the importance of your peers as a source of support, inspiration, and feedback. Magnification of your development as a designer is made possible by the collective nature of the class. Group reviews are collective for a reason, as each of you has something to gain from your peers. Our studio is a place for all, and it requires the careful attention to the needs of everyone in it.

Office Hours: I will hold virtual office hours over zoom outside of the listed class time. You are encouraged to come to my office hours, which will be held by appointment from Monday to Friday. Although office hours are optional, please do communicate with me if you feel like you are struggling or feeling lost at any point in the process. Design projects can often be confusing and difficult to know where you are at, so let me know if you have any questions, or if you would like to discuss anything with me. My door is always open!

Attendance: According to the current attendance policy of IE University, class attendance is mandatory: students must attend at least 70% of all class sessions. The studio is a great learning environment that requires your physical presence as well as your intellectual presence. Whether the class takes place in person or remotely, students' attendance is not determined by mere passive presence, but by an active participation in class. Merely coming to class or connecting through online communication software is not enough: students must participate in class activities to be accounted for as attending the class.

Inclusivity Statement: I hope to foster a sense of community in this classroom and consider this classroom to be a place where you will be treated with respect. I welcome individuals of all backgrounds, beliefs, ethnicities, national origins, gender identities, sexual orientations, religious and political affiliations – and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming, and inclusive environment for every other member of the class. If this standard is not being upheld, please feel free to speak with me.

OBJECTIVES AND SKILLS

The course is an introduction to digital tools and emerging technologies relevant to contemporary design practice. By the end of this course, you will be able to...

- Move fluidly between different digital tools, modes, and scales of operation.
- Know how to combine traditional manual techniques with digital media.
- Use design skills and digital tools to turn your ideas into developed design proposals.
- Integrate software in the wider workflow of a project.
- Use technology for creativity and visual communication.
- Engage with an increasing level of design-research.
- Work in an iterative process (feedback - loop process).

Through lectures and weekly exercises, students will develop their skills and enable creativity, abstract thinking, representation, iteration, and design development. Throughout the course, you will acquire the appropriate level creative expression and develop individual criteria regarding the use and combination of several digital tools during conceptual design, production, and communication processes. You will also develop your own critical analysis skills, meaning that by the end of the course, you should be able to critically evaluate your own design work, as well as the methodologies and tools that inform them. Conventions of design representation and communication will be explored. You will need to demonstrate an understanding of conventions, and an ability to sustain an increasing level of research in the projects over the semester. You will develop your ability to conceptually develop, produce, and communicate design projects by means of 2-, 2.5-, and 3-dimensional digital tools, and be able to translate information into interaction. Finally, you will gain skills on how to use digital tools in a creative manner.

METHODOLOGY

This course is centered around project-based learning assignments, where you will investigate and actively respond to different design challenges. Projects are expected to be developed during the class sessions and completed afterwards, and will span multiple sessions, allowing you to put into practice the newly acquired concepts. Many of this course's sessions will be focused around desk crits and reviews, allowing you to work in an iterative process (feedback - loop), an essential skill in the design world. Such sessions also allow for a critical dialogue to emerge, involving the participation of all of you in order to learn one from each other.

Outside of our class sessions, you will be guided to independently learn the technical aspects through the infinite potential of online learning resources. In between class sessions, you will be able to get further feedback on your work through my office hours.

In order to prepare for each class, weekly course assignments are to be completed and posted on MIRO prior to our class meetings. MIRO will be used as the main online platform for this course as it will provide you with an easy access to all the required learning resources as well as a space where you can upload your work, share references, and give/receive feedback. I will be also posting my office hours weekly on MIRO for those who would like extra input.

Teaching methodology	Weighting	Estimated time a student should dedicate to prepare for and participate in
Lectures	10.0 %	15 hours
Discussions	13.33 %	20 hours
Exercises	26.67 %	40 hours
Group work	10.0 %	15 hours
Other individual studying	40.0 %	60 hours
TOTAL	100.0 %	150 hours

PROGRAM

PROJECT 1: THE I+D TOOLS DECK

The I+D Design Deck is a deck of playing cards that doubles as a practical guide and introduction to design, its tools, and technologies. With this first exercise, you will learn the basics of visual composition and develop a creative proposal linked to a specific concept. The objective of this exercise is for you to turning a given concept into a graphic component that unifies and transmits its essence. By the end of the project, you will be able to visually communicate complex messaging by carefully synthesizing and structuring information.

Deliverable: Presentation + Deliverable (10% of grade)

Sessions 1 - 6

PROJECT 2: AUGMENTED REALITY

Using Augmented Reality (AR), you will transform your design proposal into an interactive design. The AR approach provides a sophisticated and futuristic aesthetic which extends the communication limitations of a paper printed flyer or a typical digital version. The objective of this exercise is for you to learn how to use these tools creatively, and to be able to translate information into interaction.

We will first analyze a series of curatorial statements from world-renowned design events. In the same way as those themes provide the frameworks for the exhibitions, choose one of the given themes and use it as the starting point for your AR filter. Before making the filter, sketch at least three different ideas of how that concept might be represented in AR. In a Richard Serra manner, decide on a verb that would represent the “action” happening in your video.

Deliverable: Presentation + Deliverable (15% of grade).

** Full marks will only be possible if your filter is accepted and published by Instagram. Otherwise, the maximum grade you can achieve is 90%.

Sessions 7 - 12

PROJECT 3: TIME-BASED MEDIA

We will introduce different workflows for creating time-based media. After dissecting a fragment of the film, create a piece of time-based media that projects the original film clip into the future. Create a concept and narrative that take a stance on the original and reinterpret it and convey it in this new moving image.

Deliverable: Presentation + Deliverable (20% of grade)

Sessions 13 - 20

PROJECT 4: APP

You will be asked to design an app that measure something. They could measure quantities, qualities or other metrics of your choice. You must consider how your selected measured matter influences the design of the app. The project will start by selecting something to measure. You will conduct a precedent survey to understand how this chosen measurable matter has been measured and calibrated in the past and in recent design contexts: the goal is to find the gaps in what hasn't been done before and opportunities for invention.

You will then conduct your own study to explore the properties of what you are measuring and discover the relationship between your measurable matter and the way you will be measuring it. You will build, experiment and test your process throughout the rest of the semester. At the end of this project, you will develop the concept and narrative about your app, how it fits into a context, how it works and explore proposals for future applications.

Context >> Concept >> Make >> Iterate >> Analysis/Narrative >> Present

Deliverable: Presentation + Deliverable (25% of grade)

Sessions 21 - 30

SESSIONS 1 - 2 (LIVE IN-PERSON)

Course Introduction + Project 1 Introduction

SESSIONS 3 - 4 (LIVE IN-PERSON)

Student presentations followed by work session with desk crits.

SESSIONS 5 - 6 (LIVE IN-PERSON)

Project 1 - Final Review

SESSIONS 7 - 8 (LIVE IN-PERSON)

Exercise 2 introduction followed by a group work session and presentations.

SESSIONS 9 - 10 (LIVE IN-PERSON)

Student Presentations (work-in progress)

SESSIONS 11 - 12 (LIVE IN-PERSON)

Project 2 - Final Review

SESSIONS 13 - 14 (LIVE IN-PERSON)

Project 3 introduction followed by a group work session and presentations.

SESSIONS 15 - 16 (LIVE IN-PERSON)

Studio / Concept – Student Presentations

SESSIONS 17 - 18 (ASYNCHRONOUS)

Asynchronous session

SESSIONS 19 - 20 (LIVE IN-PERSON)

Project 3 Final Review

SESSIONS 21 - 22 (LIVE IN-PERSON)

Project 4 Introduction followed by a work session.

SESSIONS 23 - 24 (LIVE IN-PERSON)

Desk Crits / Work session

SESSION 25 (ASYNCHRONOUS)

Asynchronous session

SESSIONS 26 - 27 (LIVE IN-PERSON)

Desk Crits

SESSIONS 28 - 30 (LIVE IN-PERSON)

Final Review

EVALUATION CRITERIA

Evaluation is continuous, which implies that all the work produced by the students along the semester will contribute to the final grade. Final grade for the course is calculated as the weighted average in the following percentages:

Criteria	Percentage	Comments
Project 1	10 %	
Project 2	15 %	
Project 3	20 %	
Project 4	25 %	
Attendance	10 %	
Class discussions and participation	20 %	

Class discussions and participation includes both an active participation during class session and on our online platform. You are required to submit all material in order to receive credit and a grade for the course.

Evaluation Criteria and Grading: The following criteria will be used for the evaluation of your work, both in terms of helping their progress and in final grading. (01) Concept: How clearly is the student articulating the conceptual intentions? (02) Translation of Concept: How well is the student using their concept to develop a design response to given problems? (03) Representation Appropriateness: How well matched is their choice of representational means to their intentions? (04) Representation Quality: How accomplished are they with regards to drawing, modeling, digital representation, etc.? To what degree does their representations convey what they ought to? (05) Oral Presentation Skills: How clearly are they presenting their ideas orally, whether at their desk, in class discussions, or to a more formal jury? (06) Participation in Discussions: How actively and how constructively are they involved in class discussions, both formally and informally? (07) Response to Criticism: How do they effectively take advantage of criticism from instructors, classmates, and outside jurors? (08) Auto-Critical Skills: To what extent are they able to critique their own work regularly and effectively? (09) Attendance: According to the current attendance policy of IE University, class attendance is mandatory: students must attend at least 70% of all class sessions. Whether the class takes place in person or remotely, students' attendance is not determined by mere passive presence, but by activity at class. Merely coming to class is not enough: students must participate in class activities to be accounted for as attending the class.

If you are caught committing plagiarism, you will automatically fail the assignment that you plagiarized. Plagiarism on a second assignment is an automatic failure of this class.

If at any point you are unsure of how you are being graded, please let me know.

PROFESSOR BIO

Professor: **MARÍA ESTEBAN CASAÑAS**

E-mail: mestebanc@faculty.ie.edu

María graduated from Massachusetts Institute of Technology (MIT) with a Master of Science in Architecture Studies. Her individual research on artificial intelligence, ethics, and design was recognized with the MIT Thesis Prize.

María is a former researcher at the Self-Assembly Lab at MIT, where she worked on self-assembly and programmable material technologies for novel manufacturing, products, and construction processes, including 4D Printing. She also became a collaborator at Harvard University, developing new bioinspired materials at the Wyss Institute for Biologically Inspired Engineering.

During her time at MIT, she taught design studios in the disciplines of Architecture and Design at both undergraduate and graduate levels.

Prior to MIT, she received her Master's Degree in Architecture from University College London (Bartlett School of Architecture) and a Master of Arts in Architecture from the University of Edinburgh.

María was awarded the Rome Prize in Architecture from the Spanish Academy in Rome where she pursued individual research as a Rome Prize Fellow.

Previously, María has worked at several renowned design and architecture offices including Grimshaw Architects (London) and Dominique Perrault (Paris).

She has designed and built installations and exhibitions at galleries around the world (Boston, Chicago, Edinburgh, LA, London, Madrid, Rome, Seoul, and Venice) including the I Seoul Biennale of Architecture and Urbanism, and the 13th, 14th and 17th Venice Architecture Biennales. Her work has been featured in international publications, for which she has received various awards and scholarships. María has lectured at different institutions including Korea University, University of Plymouth, and the Architectural Association Visiting School Madrid.

María was named one of the "Top 24 Most Innovative and Radical Female Artists in Spain" by El Mundo magazine in 2019, and in 2020, she was included in the list of "Spaniards who are Changing the World" from La Razon newspaper.

Right now, María is leading design and research projects at MITdesignX, an academic program in the MIT School of Architecture and Planning dedicated to design innovation and entrepreneurship. She is also Adjunct Professor at IE School of Architecture and Design.

OTHER INFORMATION

Academic Integrity Statement

In this course, I will hold you to the high standard of academic integrity expected of all students at IE University. I do this for two reasons. First, it is essential to the learning process that you are the one doing the work. I have structured the assignments in this course to enable you to gain a mastery of the course material. Failing to do the work yourself will result in a lesser understanding of the content, and therefore a less meaningful education for you. Second, it is important that there be a level playing field for all students in this course and at the Institute so that the rigor and integrity of the Institute's educational program is maintained.

All the work that a student submits has to be original and produced by the student: not copied nor downloaded from the internet, unless students are specifically instructed to copy other's work as a part of the actual exercise.

Please review the [IE Code of Ethical Conduct](#), where you will be able to read the IE's Academic Standards. Contact me if you have any questions about appropriate citation methods, the degree of collaboration that is permitted, or anything else related to the Academic Integrity of this course.

Mental Health

As a student, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may impact your ability to attend class, concentrate, complete work, take an exam, or participate in daily activities.

The student community at IEU has access to their counselling service during the academic year. This service is free and confidential. The team is comprised of guidance counsellors (IEU staff) and clinical psychologists and psychiatrists from SINEWS, a mental health service provider.

To schedule an appointment:

- Email: Counseling.IEU@ie.edu (or Mentoring.IEU@ie.edu)
- Phone: (+34) 921 415 312
- 24/7 Mental Health Crisis Line: (+34) 619 270 148 (English/Spanish)

For urgent or after-hours concerns, please dial 112 immediately.