PROGRAMMING FOR DESIGNERS

IE University
Professor: **RUXANDRA IANCU**
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Academic year: 20-21
Degree course: THIRD
Semester: 2º
Category: COMPULSORY
Number of credits: 6.0
Language: English

PREREQUISITES

Students are requiered to:

- bring their own personal laptop (less than 4y old) with a classical 3 button mouse to each class (16gb of RAM or more recommended)
- have installed the Processing code editor from: https://processing.org/download/
- have installed Cinema4d with a student licence: https://www.maxon.net/es/entrenamiento/licencias-educativas-maxon-one/
- have a thourough understanding of their own operating system
- have medium knowledge of Adobe editing pack (Indesign, Ilustrator, Photoshop)
- have an understanding of Miro.com and Behance.com features.

SUBJECT DESCRIPTION

In order to offer ground-breaking, innovative design solutions, the designer needs to understand the potential of technology and be able to decode its logics. This course aims to familiarise students with the world of programming and its relationship with design, the history of programming and applications.

The course is structured in 3 Blocks, one dedicated to 2D (X,Y parameters) generation, the second dedicated to the 3D (X,Y,Z parameters) virtual world and the third dedicated to systems of logics applied to 4D (X,Y,Z,Time parameters).

Each block comes with its assignments *(introductory Brief 0 exercise followed by Brief 1, 2 and 3 detailed in their respective sessions bellow)* meant to allow the student to experiment with programming in its various forms (textual, visual and analogue).

OBJECTIVES AND SKILLS

Course objectives:

- understand the structure and coding logics of Processing language, a language developed specifially for designers and visual artists.
- develop the ability to create interactive experiences and animations using code.
- understand the logics of visual programming nodes and relationship based interactions.

- familiarise the students with all the relevant programming languages used today and their application.

- learn how to create and apply personal structured systems in the process of design thinking.

- understand the connection between programming and design, the influence and the collaborative relationship between these two disciplines and their linked future.

- develop projects with programming based logics.

- familiarize the students with the programming online resources and community support.

- understand and employ the use of existing resources available to them in order to improve their designs.

METHODOLOGY

By type:

17 sessions are in Face to Face format. These are distributed in the introduction phase and late development of every asignment, which allows for agile managing of the project development. Here are also included the sessions that introduce the course structure and assignments as well as the final presentation.

9 sessions are in Videoconference format. They take place mid-assignment and students are expected to present their ongoing project in order to receive feedback.

4 sessions are in Asynchronous format. These sessions are a support for the assignments, providing theoretical and practical knowledge meant to provide the students with the tools needed to complete their assignments. They can come in the form of exercises, forum discussion, online peer reviews and reading material.

By topic:

5 sessions are dedicated to lectures that build the foundations of knowledge about programming and logic processes . These sessions provide the students with a general understanding of various programming languages, its applications, field branches and emergent futures. They set the base for the development of their projects.

12 sessions are dedicated to in class tutorials regarding the nature of code (processing and xpresso).

7 sessions are dedicated to developing the students individual projects. The results of these sessions will be presented in the final presentation. During these clases each student will be guided towards adding depth to their project. Students will be presented with references as a source of inspiration and techniques of representation.

4 sessions are dedicated to practice and investigations, in which students are provided with material they need to read and engage with and exercises to practice what was taught in class.

2 sessions are dedicated to presenting the final results of the students work.

Teaching methodology	**Weighting**	**Estimated time a student should dedicate to prepare for and participate in**
Lectures	16.67 %	25 hours
Discussions	6.67 %	10 hours
Exercises	40.0 %	60 hours
Group work	0.0 %	0 hours
Other individual studying	36.67 %	55 hours
TOTAL	100.0 %	150 hours

BIBLIOGRAPHY

Compulsory

- Maeda. *The laws of simplicity.* MIT press. ISBN 9780262134729 (Electronic)

Recommended

- Maeda. *Design by numbers.* ISBN 9780262133548 (Electronic)

- Reas. *Processing: a programming handbook.* ISBN 9780262028288 (Electronic)

EVALUATION CRITERIA

Criteria	Percentage	Comments
Intermediate Tests	10 %	Exam 1
Individual Presentation	20 %	Brief 1 submission
Intermediate Tests	10 %	Exam 2
Individual Presentation	20 %	Brief 2 submission
Individual Presentation	20 %	Brief 3 submission
Final Exam	10 %	Final presentation
Class Participation	10 %	

PROFESSOR BIO

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Ruxandra Iancu Bratosin is a designer focused on applying computational logics and social empowerment systems to sustainable development and environmental solutions. She studied architecture in Bucharest, Romania after which she took the Masters in Advanced Architecture program in the Institute of Advanced Architecture of Catalonia | IAAC. She has been active in the academic field, teaching in the Institute of Advanced Architecture of Catalonia in Barcelona, ETSAM in Madrid, Elisava in Barcelona, and she has held lectures and workshops across the globe. Currently she is an Associate Professor in the Bachelor in Design at IE School of Architecture and Design and the director of the Master in Advanced Interior Design at Structuralia. She is the cofounder of the multidisciplinary studio 50SR.

www.computationalaesthetics.com

www.50superreal.com

OTHER INFORMATION

Office Hours: Students should contact the professor to make an appointment.

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