UNIVERSITY of NICOSIA

Course Syllabus

Course Code	Course Title	ECTS Credits
ARCH-581DL	Interactive Design	10
Prerequisites	**Department**	**Semester**
None	Architecture	Spring
Type of Course	**Field**	**Language of Instruction**
Required	Design + Technology	English
Level of Course	**Lecturer(s)**	**Year of Study**
2nd Cycle	TBA	1st
Mode of Delivery	**Work Placement**	**Co-requisites**
Distance Learning	N/A	None

Objectives of the Course:

The main objectives of the course are to:

- To introduce students to the key concepts of interactive design and the most established as well as emerging technologies
- To introduce and teach the theoretical and practical framework of interactive software development tools
- To introduce students to the industry's best practices and tools on collaborative development
- To teach students how to design and realise their own hardware
- To teach students how to design and develop interactive software
- To educate students on how to think of complex systems in a simple manner
- To introduce students to a broad range of technologies and empower them to choose the right technology for each problem
- Overall to inspire students and encourage the use of technology

Learning Outcomes:

After completion of the course students are expected to be able to:

1. Prove an understanding of a broad set of technologies and their potential applications
2. Demonstrate a good working knowledge of the current development and collaboration tools, such as source code versioning (Git), interactive development environments (arduino IDE), etc.

3. Demonstrate an understanding of how common systems work, how to interface with them and how to connect multiple systems in a single design
4. Create their own modular systems that can be integrated with others
5. Prove they have integrated interactive technology into their design thinking process
6. Design and assemble bespoke hardware that can add interactivity to their physical designs
7. Design and develop interactive software that controls hardware
8. Connect multiple systems

Course Contents:

1. Introduction to interactive technologies and design principles
2. Working with the Arduino platform, the hardware and development tools
3. Making things move; using actuators, motors and other devices
4. Reacting to user input in real time
5. Sensing space and seeing through cameras
6. Sensing location and orientation (using precision GNSS and IMU modules)
7. Connecting multiple systems in real time (using WebSockets)
8. Interacting through virtual reality, mixed reality and other emerging technologies
9. Working with robots

Learning Activities and Teaching Methods:

Articulate presentations, functional source code, functional hardware designs, self-analysis, self-assessment, individual support and feedback, tutorials, case study analysis, forums, and chats

Assessment Methods:

The lecture course is assessed by the submission of coursework (assignments):

- Presentations and short writings that will accumulatively set personalised theoretical positions on a range of bioclimatic architecture concepts (as introduced via lectures, directed readings and research). (2 exercises)
- Analyses of seminal bioclimatic architecture case studies via diagrams and accompanying text as the main analytical tools.
- The assignments will be submitted incrementally throughout the semester and collated into a holistic body of work as a final submission.
- Final exam

- Formative assessment, assignments, individual research, presentations, feedback, discussions, final examination

Required Textbooks / Reading:

Title	Author(s)	Publisher	Year	ISBN
Make: Getting Started with Arduino: The Open Source Electronics Prototyping Platform	Massimo Banzi, Michael Siloh	Maker Media Inc.	2014	978-1449363338

Recommended Textbooks / Reading:

Title	Author(s)	Publisher	Year	ISBN
Programming the Raspberry Pi, Second Edition: Getting Started with Python	Simon Monk	McGraw-Hill Education	2015	978-1259587405
Interactive Architecture	Michael Fox	Princeton Architectural Press	2016	978-1616894061
Practicable: From Participation to Interaction in Contemporary Art	S.Bianchini,E. Verhagen, N.Delbard, L.Dryansky	MIT Press	2016	978-0262034753