UNIVERSITY of NICOSIA

Course Syllabus

Course Code	Course Title	ECTS Credits
ARCH-362	Advanced CAD and Mixed Media	4
Prerequisites	**Department**	**Semester**
ARCH-262	Architecture	Spring
Type of Course	**Field**	**Language of Instruction**
Required	Architecture	English
Level of Course	**Lecturer**	**Year of Study**
1st Cycle	Michail Georgiou	3rd
Mode of Delivery	**Work Placement**	**Corequisites**
Face to face	N/A	-

Course Objectives:

The main objectives of the course are to:

- Introduce the concept and potential of computer graphical programming for designers through presentations, case studies and invited guest lecturers.
- Encourage participants to utilize emergent and cutting edge tools at various stages of the design process, through lectures and hands-on demonstrations.
- Introduce the theoretical and practical framework of parametric-associative design tools through hands on applications and homework assignments.
- Develop computational design thinking through applying hierarchical process as a basis to design
- Advance participants' digital fabrication skills by encouraging the use 3d printer, CNC, and laser cutting equipment to realize their projects

Learning Outcomes:

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

1. Identify the applications of advanced digital design tools for generation, evaluation and representation
2. Describe in theoretical and practical level the use of parametric-associative design tools
3. Modify and Create basic graphical algorithms to address specific requirements at various stages of the design process
4. Formulate design workflows involving advanced digital design tools and digital fabrication methods
5. Evaluate the need for application of computational design according to the design problem.

6. Identify the relation between parametric-associative design tools and performance-based design.
7. Illustrate the capabilities of computational design tools for generation, evaluation, and representation

Course Content:

- Theoretical and historic background and applications of computational design
- Introduction to parametric-associative design logic
- Introduction to Graphical Programming Editors
- Basics of computational geometry
- Elementary Mathematical Concepts for Computational Design
- Designing with Lists
- Parametric Setting Out Modeling
- Basic Data extraction and Visualization
- Introduction to Performance Based Design
- Digital fabrication using computational modeling

Learning Activities and Teaching Methods:

Lectures, Computer Demonstrations, Discussions, Presentations, Practical Exercises and Assignments

Assessment Methods:

Presentation

Coursework

Final Project

Attendance

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Grasshoper Primer 3rd Edition	ModeLab	Robert McNeel & Associates	2017	http://grasshopperprimer.com

Lecturer's Notes / Presentations	Michail Georgiou			

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Menges, Achim	Computational Design Thinking	John Wiley & Sons	2011	978-0470665657
Tedeschi, Arturo	AAD_Algorithms-Aided Design Parametric Strategies Using Grasshopper®	Edizioni Le Penseur	2014	978-8895315300
D'Arcy Wentworth Thomson	On Growth and Form	Cambridge University Press	1992	0521437768