



Course Syllabus

Course Code	Course Title	ECTS Credits
INT-362	Advanced CAD and Mixed Media	4
Prerequisites	Department	Semester
INT-262	Architecture	Spring
Type of Course	Field	Language of Instruction
Elective	Architecture	English
Level of Course	Lecturer(s)	Year of Study
1 st Cycle	Michalis Georgiou	3 rd
Mode of Delivery	Work Placement	Co-requisites
Face-to-face	N/A	None

Course Objectives:

The main objectives of the course are to:

- To teach advanced capabilities of digital design tools for generation, evaluation, and representation
- To introduce and teach the theoretical and practical framework of advanced parametric-associative design tools
- To introduce and teach the use of materials, lights and animation techniques for digital presentations
- To teach digital fabrication techniques encouraging students to use 3d printer, milling machine, and laser cutter

Learning Outcomes:

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

1. Demonstrate the use of advanced digital design tools for generation, evaluation and representation
2. Discuss in theoretical and practical level the use of parametric-associative design tools
3. Explain the relationship between technology and aesthetics
4. Demonstrate rendering through presentations of colors, textures, materials and lights – apply animation techniques
5. Illustrate how architectural design concepts in various scales can be translated and represented into buildings and plans into planning
6. Utilize technology to understand human behavior in the built environment
7. Utilize 3d printer, milling machine and laser cutter

Course Content:

- Introduction to parametric-associative design logic
- Advanced 3d modelling
- NURBS curves and surfaces
- Transformation actions
- Advanced parametric-associative modelling
- Data, parameters, geometrical entities, etc
- Scripting
- Import, Export files
- Textures, materials, lights, renderings, animation
- Digital Fabrication
- 3D Printer, CNC Milling machine, Laser cutter

Learning Activities and Teaching Methods:

Lectures, Computer Demonstrations, Workshops, Tutorials, Discussions, Presentations, Practical Exercises and Assignments.

Assessment Methods:

Homework, Project, Mid-Term, Final Project, Presentation

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Grasshopper Primer	Andrew Payne & Rajaa Issa			http://download.rhino3d.com/Rhino/4.0/Rhino4Training/
Grasshopper online tutorials	Robert McNeel Associates			http://en.wiki.mcneel.com/default.aspx/McNeel/ExplicitHistoryExamples.html

Recommended Textbooks / Readings:

Title	Authors	Publisher	Year	ISBN
Autogenic Structures	Douglis, E.	Taylor and Francis	2009	9780415776905
Digital Fabrications: Architectural and Material Techniques.	Iwamoto, L.	Princeton Architectural Press	2009	9781568987903
Architecture in the Digital Age: Design and Manufacturing	Kolarevic B.	Taylor and Francis	2005	041538141X
From Control to Design: Parametric/Algorithmic Architecture	Meredith M., Aranda-Lasch, Sasaki M.	Actar	2008	8496540790