



UNIVERSITY OF NICOSIA

ΠΑΝΕΠΙΣΤΗΜΙΟ ΛΕΥΚΩΣΙΑΣ

University of Nicosia, Cyprus

Course Code ARCH-262	Course Title Advanced Computer Aided Design	ECTS Credits 4
Department Architecture	Semester Spring	Prerequisites ARCH-261
Type of Course Required	Field Architecture	Language of Instruction English
Level of Course 1 st Cycle	Year of Study 2nd	Lecturer(s) Michalis Georgiou
Mode of Delivery face-to-face	Work Placement N/A	Co-requisites None

Objectives of the Course:

The main objectives of the course are to:

- To teach students the theoretical framework of digital design
- To introduce and encourage practice in different kind of 3D modelling software
- To teach students various modelling techniques including transformation, meshing, and algorithmic design
- To teach digital fabrication techniques encouraging students to use 3d printing and milling machine
- The course is designed to teach students the advanced knowledge of computerized 3D design and to allow practice in different kinds of design on the computer
- To teach the student advanced capabilities of 3D computerized design for drafting, design, visualization, analysis and modelling
- To teach the students how to follow all the procedures necessary to prepare a drawing from initial design creation through final plot output
- The course attempts to teach at various levels between 'how to' considerations of learning hardware and software, while exploring a deeper understanding of the technological implications on design and digital fabrication

Learning Outcomes:

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

- Demonstrate the basic principles of digital design
- Participate in network projects and individual work
- Experiment and understand the different principles of modelling such as Architectural modelling and free modellers
- Utilize and combine various CAD software according to individual projects and design outcomes
- Utilize 3d printer and milling machine
- Develop an ability to draw and express architectural conditions in that they

satisfy both aesthetic and technical requirements

Course Contents:

- Introduction to digital design.
- Introduction to CAD Modeling.
- 3D Modeling and Architecture elements.
- NURBS and Curves in 3D.
- Import, Export. Create DWG/ DXF/ DGN/ IFC Bitmap.3ds/ STL/ IGS
- Scripting.
- Introduction to Digital Fabrication.
- 3D Printer – Fuse Deposition, Modeling CNC Milling machine.

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 Online Resources:

Authors	Title	Link
Robert McNeel Associates	Rhino Level 2 Training Manual	http://download.rhino3d.com/Rhino/4.0/Rhino4Training/
Asgvis	V-ray for Rhino Manual	http://www.vray.com/vray_for_rhino/manual/index.shtml

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Leach Neil	Designing for a digital world	Wiley-Academy, Chichester	2002	0470844191
Lynn, G.	Animate form	Princeton Architectural Press	1999	1568980833