

Course/Subject/Unit Description

1. General Information			
School		School of Design Studies	
Department		INTERIOR ARCHITECTURE	
STUDY LEVEL		Undergraduate	
CODE OF SUBJECT	EA306	SEMESTER	3
SUBJECT TITLE		3D Digital Architectural Modeling	
Teaching Content	Weekly (Hrs)	Credis	
Lectures, Essays, Design Workshops/Excercises, Design Project – Portfolio of work.	1 3	4	
Type of Subject	Mandatory - Special Infrastructure Course		
PREREQUIRED COURSES	No		
Teaching and Exams Language	Greek		
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes		
Course website (URL)	ia.ihu.gr/ea306		

2. Aims and Objectives – Methods – Skills
a. Learning Outcomes
<p>General context The course is an introduction to basic techniques, processes and methods of 3D digital design that digitally support the architectural design methodology and the corresponding 3D spatial projections such as, among others, the axonometric and perspective design.</p> <p>Aims and objectives The main objectives of the course are to familiarize students with the topics: 3D digital design of architectural spaces, Contribution to architectural representation and spatial perception, Creation of 3D models as basic components of use and integration in spatial digital interactive applications, integration to other applications with critical thinking and approach to the use of 3D digital tools in the process of architectural design and conception</p> <p>Method - learning outcomes The course consists of both theoretical and laboratory content. In the theoretical part, a series of injected theoretical presentations related to 3D digital design are made, which are analyzed and discussed with the active participation of the students, either in the design application of the computer, or on blackboard or with the use of multimedia or visual material. In the laboratory part, a series of laboratory exercises for the application of theoretical presentations are performed. Students first prepare individual laboratory exercises and then an individual integrated digital design study. Upon successful completion of the course the student will:</p> <ul style="list-style-type: none"> • has knowledge of the basic theoretical concepts and tools of 3D digital design, • knows the rules and techniques of transforming 2D models into 3D, • knows the ways and limitations of 3D linear - surface and solid modeling • creates, represents and processes 3D architectural models of spaces, • be able to integrate, connect and communicate 3D models with similar environments of other digital design systems, • will be able to make computational architectural measurements (areas, lengths, angles, surfaces, volumes, etc.). • understands the 3D digital design process in relation to the needs of architectural design methodology, thinking and conception. • has the ability to express and communicate his 3D design-synthetic ideas in a digital way,

- can have a standalone 3D digital design action covering all the design and presentation needs of synthetic and other related workshops

β. Skills

- Knowledge of analog design methodology at the level of floor plan, facade, section and 3D spatial projections (axonometric, perspective)
- Synthesis of design data and information, using 3D digital applications
- Autonomous work
- Application of theoretical knowledge in practice
- Criticism of both the use and the integration of 3D digital tools in the architectural design methodology
- 3D spatial perception

3. Subject Context

It aims to acquire the basic knowledge and skills so that students can, using computer-aided design programs, give form to mainly existing or proposed architectural spaces in 3 dimensions. The course has both theoretical and laboratory character.

The theoretical character concerns: preparation - rules and techniques of transformation of 2D models into 3 dimensions, ways and limitations of 3D modeling, linear - surface and solid modeling, processing of 3D models, ways and techniques of 3D model representation, integration - connection and communication of 3D models with corresponding environments of other digital design systems, computational architectural measurements and automations, etc.

The laboratory character will relate to architectural and morphological content that will gradually respond to an evolving framework of requirements that will meet both specific existing educational or laboratory needs of students, as well as techniques, innovative ways of integrating 3D volume compositions into other design platforms. web platforms, satellite imagery, and digital interactive applications on all digital media (PC, Tablet, mobile).

As a result, 3D volumes will have a multiple role: a) Contribution to architectural representation and spatial perception and b) 3D models as "cores" of multimedia material to be used to create or integrate into future spatial digital interactive applications. Particular attention is paid to the issue of absolute and comparative sizes of space, to the spatial perception with a critical architectural approach through specific interventions, ways of digital simulation and comparison of analog and digital representations.

4. Teaching and learning methods – Evaluation and assessment

<ul style="list-style-type: none"> - Theory and Design Workshops – Main Project Brief/ Site visits - Group Appraisal /Site Analysis - Theory Essay and Design Exercises - Interim Reviews - Project Final Pin Up - Portfolio Hand In. 	<p>Theory and Design Workshops Theory Essay and Design Exercises Final Project</p>	
<p>Use of Information and Communication Technologies</p>	<p>Use of computer software Multimedia and conventional presentations via PC Video projection</p>	
<p>Teaching organization</p>	<p>Activity</p>	<p>Semester Credits</p>

	Lectures	20
	Theory Essay	30
	Design Workshop and Excercises	30
	Main Design Project	10
	Research and Analysis of Bibliography	10
	Total	100
<i>Student assesment</i>	Project design and presentation Laboratory examination via PC Digital portfolio organization	

5. Recommended/ Bibliography

Indicative suggested bibliography:

- Dally W., & Harging, C., (2017), Digital design, from the systems side. University Publications of Crete, ISBN 978-960-524-445-3, England, translated edition Crete 2017
- Mano, M., Cilleti, M., (2017), Digital design. Papatiriu Publications, ISBN 978-960-491-084-7, USA, translated edition Athens, 2017
- Wakerly, J., (2004), Digital Design, Principles and Practices. Key Number Publications, ISBN 960-209-728-0, USA, translated edition Athens, 2017
- Kappos, I., (2017), Work with Autocad 2017. Key Number Publications, ISBN 978-960-461-730-2, Athens 2017
- Omura .G., Benton B., (2016), Mastering AutoCAD 2017 and AutoCAD LT 2017. John Wiley & Sons Inc Publications, ISBN 9781119240051, USA 2016
- Dedousis, V., Giannatsis, I., Kanellidis, V., (2015), CAD Systems. SEAB Publications, KALLIPOS, ISBN: 978-960-603-460-2, Athens 2015
- Anthymidis, K., David, K., (2015), Computer Aided Design, Autocad in practice. Dissigma Publications 2nd edition, ISBN 978-960-9495-54-7, Athens 2015
- Kouzeleas, St. (2021), Electronic notes "Basic functions of AutoCAD 3D platform".

Related Scientific Journals