Course/Subject/Unit Description

1. General Information			
School		School of Design Studies	
Department		INTERIOR ARCHITECTURE	
STUDY LEVEL		Undergraduate	
CODE OF SUBJECT	**EA406**	SEMESTER	
SUBJECT TITLE		**Architectural Conception with Computers I**	
Teaching Content	Weekly (Hrs)	Credis	
Lectures, Essays, Design Workshops/Excercises, Design Project – Portfolio of work.	**1** **2**	**3**	
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/ea406	

2. Aims and Objectives – Methods – Skills

a. Learning Outcomes

General context

The course delves into digital design applications in architectural composition and construction with a critical architectural thinking and conception through options

Aims and objectives

The main objectives of the course are the students' deepening in concepts of vector and mosaic imaging, in complementary digital design systems, and in relations, communication between them, in digital design applications in the architectural synthetic process, in adapting different 3D digital design tools to the needs of conception and the choice of how to highlight aspects of an architectural project (aesthetic, functional, construction).

Method - learning outcomes

The course consists of both theoretical and laboratory content. In the theoretical part, a series of injectable theoretical presentations are made, which are analyzed and discussed with the active participation of the students, either in multiple computer design applications, 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:

• has knowledge of advanced theoretical concepts (vector, pixel mapping, scale analysis, image, resolution, color models, design system interfaces, etc.) and multiple digital design and editing tools;

• selection of a custom digital design environment in relation to its architectural composition and highlighting of its elements,

• can communicate design content in different digital design systems

• can involve and connect different methods of digital representation of an architectural project.

β. Skills

• Knowledge of 3D digital design
• Architectural Design
• Synthesis of design data and information, using multiple digital applications
• Autonomous work

• Application of digital design theoretical concepts in different digital design environments
• Spatial perception
• Criticism of both the use and synthesis of digital tools in the service of the synthetic process architecture

3. Subject Context

It is the evolution of the course "3D digital modeling of architectural work" at both theoretical and laboratory level. The course delves into issues of digital design application in architectural composition and construction with a critical architectural thinking and concept. The tools of 3D digital design and representation are adapted to the needs of the architectural concept and become the means of support, assistance and highlighting of all aspects of the architectural project (aesthetic, functional, construction).
The theoretical approach is related to the concepts of vector and mosaic imaging, scale analysis, digital mapping and corresponding transformations as well as complementary digital design systems, while emphasizing interfaces, relationships and communication between them for their final application in processes. architectural conception in various 3D digital modeling environments.
The laboratory approach is related to the design, location, organization of architectural elements that will adapt and critically integrate the capabilities of digital tools, choosing the appropriate digital design environment and taking into account both the morphological-decorative, functional and structural-structural issues that the respective design environment or tools highlight in the most customized way.

4. Teaching and learning methods – Evaluation and assessment

- Theory and Design Workshops – Main Project Brief/ Site visits - Group Appraisal /Site Analysis - Theory Essay and Design Exercices - Interim Reviews - Project Final Pin Up - Portfolio Hand In.	Theory and Design Workshops Theory Essay and Design Exercices Final Project Portfolio	
Use of Information and Communication Technologies	Use of computer sofware Multimedia and conventional presentations via PC Video projection	
Teaching organization	Activity	Semester Credits
	Lectures	20
	Theory Essay	30
	Design Workshop and Excersices	30
	Main Design Project	10
	Research and Analysis of Bibliography	10
	Total	100
Student assesment	Theoretical written examination Architectural composition - project via PC Laboratory examination via PC Digital portfolio organization	

5. Recommended/ Bibliography

Indicative suggested bibliography:

• Demiri, K., Lahana, N., Louizidis, M., (2002), Introduction to the architectural composition I. University Publications NTUA, ISBN 9789602546116, Athens 2002
• Kapopoulos A., (2006), Architectural composition. Polytropon Publications, ISBN 9789608354562, Athens 2006
• Neufert E., (2010), Building and architectural composition. Giourdas Publications, ISBN 9789605126131, Germany, translated edition Athens 2010
• Littlefield D., (2014), Architectural composition. Publisher Key Number, ISBN 9789604614516, England, translated edition Athens 2014
• Papaioannou T. 2015, Thoughts on Architectural Composition, Indictos Publications, Athens
• Vrychea Ά. 2003, Housing and residence / Exploring the limits of architecture, Hellenic Letters Publications, Athens
• 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. Papasotiriou 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
• Cline L., (2014), SketchUp for Interior Design. John Wiley & Sons Inc Publications, ISBN 9781118627693, USA 2014
• Schreyer A., (2016), Architectural Design with SketchUp. John Wiley & Sons Inc Publications, ISBN 9781118978818, USA 2016
• Brightman M., (2013), The SketchUp Workflow for Architecture. John Wiley & Sons Inc Publications, ISBN 9781118290149, USA 2013
• Chopra A., (2014), Sketchup 2014 For Dummies. John Wiley & Sons Inc Publications, ISBN 9781118822661, USA 2014
• 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, S. (2021), Electronic notes on Digital design sofware.

Related Scientific Journals