

2.8 CE0280 – Introduction to Architectural Design

(1) GENERAL

SCHOOL	ENGINEERING SCHOOL		
ACADEMIC UNIT	CIVIL ENGINEERING DEPARTMENT		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	CE0280	SEMESTER	2
COURSE TITLE	Introduction to Architectural Design		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	WEEKLY TEACHING HOURS	CREDITS	
	3	3	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Special Background Course		
PREREQUISITE COURSES:			
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS			
COURSE WEBSITE (URL)	https://eclass.uniwa.gr/courses/CIV227/		

(2) LEARNING OUTCOMES

<p>Learning outcomes The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</p> <p>Consult Appendix A</p> <ul style="list-style-type: none"> • Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area • Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B • Guidelines for writing Learning Outcomes
<p>Upon successful completion of the course, students will be able to:</p> <ol style="list-style-type: none"> 1. Know the basic principles of Architectural Design when preparing building studies, mainly in terms of construction and functional design requirements. 2. Recognize the design vocabulary in the architectural plan, section and view, as well as in 3D design. 3. Combine the basic knowledge of construction and functional organization of a building for the complete drafting of the plans in an architectural study. 4. Distinguish and identify the basic elements for anthropometric quantities during design interior design. 5. Organize at a preliminary level the interior of a house, with the necessary furniture equipment.
<p>General Competences Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?;</p>

Search for, analysis and synthesis of data and information, with the use of the necessary technology
Adapting to new situations
Decision-making
Working independently
Team work
Working in an international environment
Working in an interdisciplinary environment
Production of new research ideas

Project planning and management
Respect for difference and multiculturalism
Respect for the natural environment
Showing social, professional and ethical responsibility and sensitivity to gender issues
Criticism and self-criticism
Production of free, creative and inductive thinking
.....
Others...

Specifically, students will be able to perform:

- Search, analyze and synthesize data and information.
- Project design and management.
- Thinking before making decisions.
- Autonomous work.
- Teamwork.
- Promotion of free, creative and inductive thinking.

(3) SYLLABUS

1. INTRODUCTORY ELEMENTS

Architecture and Architectural Design. Design and Planning. The language of Architectural Design.

Course object and objectives.

2. APPROACH TO CONSTRUCTION

The concept of the building shell. Basic building elements and their geometric representation.

Structural analysis as part of Architectural Design.

3. ARCHITECTURAL DESIGN ELEMENTS IN BUILDINGS WITH BEARING STONE

Structural structure and individual elements with supporting role - openings and frames - balconies, rhythmic elements.

Brief remarks on the stone buildings of urban and traditional architecture in Greece. Function of construction with function and form.

Case studies.

Analysis and solving case studies through geometric representations (floor plans, sections, faces).

4. ANTHROPOMETRIC DATA AND ERGONOMIC ELEMENTS IN ARCHITECTURAL DESIGN

The evolution of Anthropometry.

Anthropometric sizes and ergonomic devices, with emphasis on housing.

Design elements for the disabled and the disabled.

5. ARCHITECTURAL DESIGN ELEMENTS IN BUILDINGS WITH REINFORCED CONCRETE

The reinforced concrete structure.

The organization of building units into structural units. The concept of norm in structural design.

Functional and construction grid. Examples.

Indicative example of a rational sequence of design and representation of basic building elements.

Case study

Scales: calculation methodology / basic principles and assumptions of representation in architecture in scale 1:50.

6. THE IMPORTANCE OF THE LEGAL FRAMEWORK IN ARCHITECTURAL DESIGN

Basic information about the concepts of building conditions. Allowed items and Realized items.

New Building Regulation (2012) and Building Regulation. Topographic Contents

Chart and Coverage Chart. Requirements for indicating data in the plans of the Final Architectural Study. Architectural Preliminary Design and Implementation Study.

7. APPROACH TO SYNTHETIC PROCESSING IN ARCHITECTURAL DESIGN

- Investigation of space environments, orientation, view.
- The structural grid.
- Flexibility of building program.
- Operational diagrams per level and detailed by individual uses, according to the building program.
- Separation of functional zones and / or grouping.
- The role and importance of vertical communication cores.
- The knowledge of the evolution of the operational provisions.
- Problems when introducing new use in existing building shells.

- The theory of empathy and visual deception.
- The importance of the capabilities of the material and the selected building system.
- The geometry of shapes. Proportions, volumetric physique, contrasts, variety.
- Complete and empty / indoor - outdoor connection.
- The character of the building.
- The knowledge of the evolution of forms.
- The "rhythm" of the time. Current trends.
- The central idea. Symbols.
- The importance and modern practice of collaborations.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	<p>Face-to-face</p> <p><u>THEORY</u></p> <p>Lecture using powepoint presentation and analysis through case studies</p> <p><u>PRACTICE EXERCISES</u></p> <p>Solve drawing exercises in classroom / Assignments</p>										
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	<p>Teaching using ICT, Communication and Electronic Submission.</p>										
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i>	<table border="1" style="width: 100%;"> <thead> <tr> <th style="background-color: #d9ead3;">Activity</th> <th style="background-color: #d9ead3;">Semester workload</th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td style="text-align: center;">39</td> </tr> <tr> <td>Study bibliography</td> <td style="text-align: center;">11</td> </tr> <tr> <td>Field research work</td> <td style="text-align: center;">20</td> </tr> <tr> <td>Assignment</td> <td style="text-align: center;">20</td> </tr> </tbody> </table>	Activity	Semester workload	Lectures	39	Study bibliography	11	Field research work	20	Assignment	20
Activity	Semester workload										
Lectures	39										
Study bibliography	11										
Field research work	20										
Assignment	20										

<p><i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i></p>		
	Course total	90
<p>STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Language of evaluation: Greek</p> <p>Final written examination: 80%</p> <p>Assignments 20%</p>	

(5) ATTACHED BIBLIOGRAPHY

<p><u>Greek Bibliography:</u></p> <ol style="list-style-type: none"> 13. Malikouti Stam. – Markopoulou Natasa (2017), ARCHITECTURAL DRAWING – Design methodology at the 1:50 scale, Syhroni Ekdotiki: Athens. 14. Athanasopoulos Chr., Construction of buildings: composition and technology, 7th edition, Athens: self-published, 2007. 15. Zachariadis A., Building Technology, Thessaloniki: University Studio Press, 2004. 16. Kourniatis Nik., Geometry and Architecture, Tziola publications: Thessaloniki, 2015. 17. Littlefield David curator, Architectural Composition - Building Design Data, 4th English edition, translated by K. Karanikolos, sci. edited by Evdokia Moschaki, Athens: publications LOCKERY, 2013. 18. Malikouti Stam., Functional structure and architectural development of the historical center of Piraeus, doctoral dissertation, School of Architecture, NTUA, 1999. 19. Michelis Pan., Architecture as Art, Panagiotis and Efi Michelis Foundation: Athens, 2008. 20. Koyrniatis N. (2018), <i>Representation Techniques using Geometric Methods and Modern Digital Tools</i>, Thessaloniki: Tziolas Publications. 21. Koyrniati A.M., Koyrniatis N. (2012), <i>Perspective in Architectural Representation</i>, Thessaloniki: Tziolas Publications. <p><u>Foreign Bibliography:</u></p> <ol style="list-style-type: none"> 1. Accessible components for the Built Environment: Technical Guidelines embracing Universal Design, UNICEF, 2014. 2. Adler David editor, Metric Handbook – Planning and Design Data, Architectural Press: UK, 1999. 3. Ching F., A Visual Dictionary of Architecture, 4th edition, John Wiley & Sons: NJ, 2012. 4. Goldsmith S., Universal Design. A Practical Guidance for Architects, Routledge: UK, 2000. 5. Kara Hanif & Georgoulas Andreas editors, Interdisciplinary Design /New Lessons from Architecture and 6. Olsen Clara & Mac Namara Sinead, Collaborations in Architecture and Engineering, Routledge: NY-London, 2014. 7. Pfammatter Ulrich, The Making of the Modern Architect and Engineer, Birkhäuser: Berlin, 2000.
--