

COURSE OUTLINE

(1) GENERAL

SCHOOL	Architecture		
ACADEMIC UNIT	Architecture		
LEVEL OF STUDIES	Diploma		
COURSE CODE	APY 404	SEMESTER	4th
COURSE TITLE	ARCHITECTURAL TECHNOLOGY II		
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	
Lectures and technical experimentation	6	6	
<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>	General background, special background, specialised general knowledge and skills development.		
PREREQUISITE COURSES:	YES (ARCHITECTURAL TECHNOLOGY I)		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes (in English)		
COURSE WEBSITE (URL)	-		

(2) LEARNING OUTCOMES

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.

Consult Appendix A

- *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*

The course of Architectural Technology II of the 4th semester comes as the supplementary course of the course of Architectural Technology I of the 3rd semester in order to create a year-long studio on Architectural Technology. The educational focus of the course is to further deepen the knowledge and understanding of the students on matters such as the structural aspects of the buildings and the parameters of construction technology that affects architectural design, as well as the bioclimatic design principles that are embedded in the architectural design and the way they affect the construction details of the building.

The curriculum forms itself in the continuation of the design of the subject of the 3rd semester by shifting the focus to the skin of the building and the landscape architecture that surrounds it. Moreover the rest of the spaces (roof and basement) are designed thoroughly through construction details. The final outcome is the design and organisation of all the construction documents necessary for the commencement of the contracting phase.

During the semester, the students are given lectures on various subjects such as lighting design, mechanical

engineering networks and digital fabrication by invited professionals. Finally they are introduced to all the design packets of the building and learn how to supervise the work of the other engineers.

By completing the course, the student should:

- be able to understand the basic and critical characteristics of construction and its connection to the technological and natural aspects affecting it,
- have a basic perception of the tools and techniques required for construction and their use in order to achieve completion of construction,
- be able to distinguish the basic roles during construction and evaluate each one's involvement in the process (engineers, contractors, etc.),
- be able to evaluate the importance of the construction methodology in conjunction to problem-solving,
- be able to perceive some basic construction elements and their connection to time planning,

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?

<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>
<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>
<i>Decision-making</i>	<i>Respect for the natural environment</i>
<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Team work</i>	<i>Criticism and self-criticism</i>
<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>
<i>Working in an interdisciplinary environment</i>	<i>.....</i>
<i>Production of new research ideas</i>	<i>Others...</i>
	<i>.....</i>

- Search for, analysis and synthesis of data and information, with the use of the necessary technology
- Decision-making
- Working independently
- Team work
- Production of new research ideas
- Planning and construction of a full-scale structure
- Exercise on reviewing and self-criticism
- Promotion of free, creative and inductive reasoning

(3) SYLLABUS

- I. The Outer Skin of the Building: From the shade to the window-building. Introduction of the Instructors
- II. Fascade design and Engineering. Introduction Lecture
- III. Fascade design and Engineering. Materials, Construction Methods and examples
- IV. Lighting Design Lecture by invited professional. Presentation of the 1st work phase by the students
- V. Bioclimatic Design Principles. How they are embedded in Architectural Design
- VI. Window and Door Frame Design. Introduction Lecture
- VII. Leed Design under Greek Department of Buildings Law. Midterm Presentation
- VIII. Electrical and Mechanical Engineering on Architectural Design
- IX. Water supply and drainage Networks
- X. Fascade and Architectural Skin. Bioclimatic principles in landscape design
- XI. Final Presentation

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Lectures and technical experimentation	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	YES	
TEACHING METHODS <i>The manner and methods of teaching are described in detail. 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. 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>	Activity	Semester workload
	Lectures	15
	Practical exercises on specific methodologies and analysis in smaller groups	45
	Small individual exercises	5
	Group project	25
	Presentation/critic	15
	Individual study	45
	Course total	150
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure 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 Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	<ol style="list-style-type: none"> Midterm Presentation of group project(60%) comprising of: <ul style="list-style-type: none"> Construction Detail Design Design, organisation and Presentation of Fascade, Roof, Basement and Landscape design Comparative implementation of theoretical elements <u>Evaluation Method: Formative evaluation</u> Comparative evaluation of the practical exercises Final Presentation of group project (40%) <u>Evaluation Method: Summative evaluation</u> 	

(5) ATTACHED BIBLIOGRAPHY

<p>- <i>Basic bibliography:</i></p> <p>- Χρήστος Γ. Αθανασόπουλος ΚΑΤΑΣΚΕΥΗ ΚΤΙΡΙΩΝ ΣΥΝΘΕΣΗ ΚΑΙ ΤΕΧΝΟΛΟΓΙΑ εκδ. Α. Παπασωτηρίου Αθήνα 1991</p> <p>- Χρήστος Γ. Αθανασόπουλος ΠΡΟΣΤΑΣΙΑ ΚΤΙΡΙΩΝ ΘΕΡΜΟΜΟΝΩΣΗ ΗΧΟΜΟΝΩΣΗ-ΗΧΟΠΡΟΣΤΑΣΙΑ εκδ. Α. Παπασωτηρίου Αθήνα 1991</p> <p>- HEINRICH SCHMITT ANDREAS HEENE ΚΤΙΡΙΑΚΕΣ ΚΑΤΑΣΚΕΥΕΣ. εκδ.Μ. Γκιούρδας Αθήνα 1994.</p> <p>- Peter Neufert, Οικοδομική και Αρχιτεκτονική Σύνθεση, Εκδόσεις Γκιούρδας Μ.</p> <p>- <i>Suggested bibliography:</i></p> <p>- Meyer-Bohe, Οικοδομικές Λεπτομέρειες, 1000 Τυπικές επιλύσεις κτιριακών κατασκευών, Μ. Γκιούρδας, 1987</p> <p>- Κουκής, Σ., Δομική Τεχνολογία. Αθήνα 2001</p> <p>- Watts, Andrew, Modern Construction Handbook. Springer-Verlag Wien New York 2001</p> <p>- Ching, D. K., Francis, Building Construction Illustrated, J. Wiley & Sons (4th edition) 2008</p>

- Charleson, W. Andrew, Structure as Architecture. Architectural Press – Elsevier, 2001
- Macdonald, J. Angus, Structure and Architecture. Architectural Press – Elsevier, 2001
- Daniels, K., Low Tech, Light Tech, High Tech: Building in the Information Age, Birkhauser, 2000
- Hall, Andrew (Ed). Details in Architecture. Creative Detailing by Leading Architects. Images Publishing, 2009
- Garrison, P. Basic Structures for Engineers and Architects. Blackwell Publications, 2005
- Schultz, H.C., Sobek W., Habermann, K. Steel Construction Manual, Birkhäuser, 2000
- Herzog, T. Timber Construction Manual, Birkhäuser, 2004

- *Related scientific journals:*

- Detail Magazine, Detail Publishers