

#### COURSE RECORD

Code	ARCH 528
Name	Use of Natural Stones in Architecture
Hour per week	3 (3+0)
Credit	3
ECTS	7
Level/Year	Graduate
Semester	SPRING
Type	Elective
Location	
Prerequisites	
Special Conditions	
Coordinator(s)	Assoc. Prof. Dr. Müge AKIN
Webpage	
Content	A significant part of the historical buildings were built using natural building stones. In this context, subjects such as the usage areas of natural building stones, determination of the physical and mechanical properties of these rocks, standards for natural building stones, deterioration of the building stones in the course of time and the renewal of natural building stones used in buildings that have historical significance and have lost their initial features with the effect of deterioration are of great importance for architecture. For this reason, it is aimed to provide information with an interdisciplinary approach for those who are interested in the topics specified in this course.
Objectives	<ul style="list-style-type: none"> <li>• Contribution to architectural technology with an interdisciplinary approach</li> <li>• To provide basic information on the assessment of deterioration in natural building stones</li> <li>• To emphasize the issues to be considered in the selection of natural building stones</li> <li>• Contributing to the renewal of natural building stones</li> </ul>
Learning Outcomes	<p>L01 Investigation of the properties of natural building stones depending on interdisciplinary approaches</p> <p>L02 Examining the structures constructed using natural building stones</p> <p>L03 Investigation and analyzes of the deterioration effects in natural building stones</p> <p>L04 Designing the issues to be considered in the selection of natural building stones in renovation projects</p>
Reading List	<ul style="list-style-type: none"> <li>• Siegfried Siegesmund, Rolf Snethlage, 2014. Stone in Architecture Properties, Durability, Springer-Verlag Berlin Heidelberg. doi.org/10.1007/978-3-642-45155-3.</li> <li>• Smith, M.R., 2000. Stone: Building stone, rock fill and armourstone in construction. Quarterly Journal of Engineering Geology and Hydrogeology 33(2):176-176. doi: 10.1144/qjegh.33.2.176.</li> </ul>
Ethical Rules and Course Policy	

#### LEARNING ACTIVITIES

Activities	Number	Weight (%)
Lecture	3	25%
Group Works	6	25%
Presentations	4	25%
Site Visits	2	25%
Total		100

#### ASSESSMENT

Evaluation Criteria	Weight (%)
Quizzes	10%
Weekly Assignments	10%
Group Project Assignments & Presentations	20%
Midterm submission	20%
Final project	40%
Total	100%

For a detailed description of grading policy and scale, please refer to the website <https://goo.gl/HbPM2y> section 28.

#### COURSE LOAD

Activity	Duration (hour)	Quantity	Work Load (hour)
In class activities	2	14	28
Lab	1	7	7
Group work	4	12	48
Research (web, library)	3	12	36
Required Readings	2	10	20
Pre-work for Presentation	3	7	21
Lab reports-technical trip	2	7	14
General Sum			174

ECTS: 7 (Work Load/25-30)

#### CONTRIBUTION TO PROGRAMME OUTCOMES\*

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
L01	5	2	5	3	2	4	5	5	4	4	3	4
L02	3	1	4	4	2	5	4	3	5	3	1	3
L03	3	1	4	5	4	3	3	3	3	2	2	3
L04	5	3	3	5	3	4	3	3	5	2	2	2

\* Contribution Level: 0: None, 1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High

#### WEEKLY SCHEDULE

W	Topic	Outcomes
1	Introduction	L01
2	Natural Stones	L02
3	Physico-mechanical properties of natural stones (observing in the laboratory)	L02
4	Physico-mechanical properties of natural stones	L02
5	Determination of physico-mechanical properties of natural stones using laboratory tests (observing in the laboratory)	L02, L03
6	Classification of natural stones based on application areas (discussion groups)	L02
7	Related standards (discussion about the approaches in the standards)	L03
8	Natural stones used in historical structures (presentation-group work)	L03, L04
9	Natural stones used in historical structures (technical trip-group work)	L03, L04
10	Deterioration of natural stones	L02, L03, L04

11	Deterioration of natural stones (presentation-group work)	L02, L03, L04
12	Natural stones for structures-examples (presentation-group work)	L01, L02, L03, L04
13	Natural stones for structures-examples (presentation-group work)	L01, L03, L04
14	Renovation of natural stones in historical structures (presentation-group work)-(final project)	L03, L04

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09.06.2020