Universidad de Alcalá

GUÍA DOCENTE

ASIGNATURA TRANSVERSAL

Architecture and Wood

Grado en Fundamentos de Arquitectura y Urbanismo Universidad de Alcalá

Curso Académico / 2021-2022

Cuatrimestre I

COURSE GUIDE

Course name:	**Architecture and Wood**
Course code:	
Degree to be obtained:	Degree in Fundamentals of Architecture and Town Planning
Department and Knowledge Area:	**Architecture / Architectural Projects**
Type:	**Cross-curricular**
Créditos ECTS:	**4 ECTS**
Course and semester:	**Cross-curricular Subject / Semester 1**
Faculty:	Luis Laca (PTU, coordinator) Esperanza González (ProfContrDr) y Manuel de Miguel (PAyudDr)
Timetable and tutorial timetable:	According to the timetable approved by the Faculty In conjunction with the course timetable: two hours before or after the class, to be requested by the student; if this time is not suitable, the time will be agreed upon between the professor and the student
Language:	English
Abstract:	Using the best references on the subject, as well as an analysis of actual buildings, the most relevant examples of wooden architectures (for an architect based in Europe) will be studied: Roman woodworking, Spanish medieval carpentry and Anglo-Saxon timbered structures, as well as a number of contemporary examples, with special emphasis on the latest Japanese architecture. In his educational task developed in America (Illinois Institute of Technology), Ludwig Mies van der Rohe encouraged to build first in wood, then in stone and brick, to eventually lead to steel and reinforced concrete. Mies van der Rohe believed that an architect must fully understand the materials before designing. This new subject aims to follow Mies' proposal.

1. PRESENTATION

The subject tries to complement the project methodology basing in an updated definition of the material resources available in our country (with special emphasis on wood and products derived from it) - Spanish wood is of excellent quality -, reflecting on related design issues with materials linked to a new way of considering raw resources, from a low-tech technology perspective.

Using the best references on the matter, as well as an analysis of real cases, the most relevant wooden architectures for a Spanish architect or one based in Western Europe will be studied: Roman carpentry, Spanish *carpintería de armar* and Anglo-Saxon timber frame structures, as well as a number of examples of contemporary architecture, with particular emphasis on Japanese architecture.

In his teaching career developed in America (Illinois Institute of Technology), Ludwig Mies van der Rohe encouraged his students to build first in wood, then in stone and brick, to eventually lead to steel and reinforced concrete. Mies van der Rohe believed that an architect must fully understand materials before designing. This new subject aims to follow Mies' proposal.

Kengo Kuma has recently reported that only when he did his master's studies in New York (Columbia) did he understand the need to study traditional Japanese architecture, whose fundamental material was precisely wood. This led him to a reinterpretation of traditional elements seen from a contemporary perspective. The student will develop here a similar process, in this case obviously from the perspective of Spain or western Europe.

In the case of Spain, the tradition would first be embodied by Roman architecture and then by Spanish carpentry, with two major influences from the modern repertoire, timber frame structures derived from the Anglo-Saxon model, present in some areas of our country, especially Castille and northern Spain, as well as a series of various examples of contemporary architecture, among which the most recent Japanese architecture could be highlighted. As for examples of contemporary influential architecture, it is worth highlighting the work of Peter Zumthor (structure of the Roman ruins of Chur, his own workshop, the Sumvith chapel and the pavilion of the World Expo in Hannover 2000); It is also worth highlighting the work of Kengo Kuma, characterized by a refined use of wood as a practically unique material of the work, which demonstrates a deep knowledge of the nature of wood as a construction material, combining new and traditional elements to produce an architecture that has become an original model in its own. As the Russian-born cabinetmaker James Krenov stated: "form is only the beginning…":

> «[…] form is only a beginning. It is the combination of feelings and a function; shapes and things that come to one in connection with the discoveries made as one goes into the wood, that pull it together and give meaning to form».

2. COURSE AIMS

General aims:

- GA2 – Adequate knowledge of the history and theories of architecture, as well as knowledge of the arts, technology and related human sciences

- GA3 – Understanding of the fine arts as a factor that can influence the quality of architectural design

Interdisciplinary aims:

- IA1 – Knowledge of the history and theories of architecture, as well as knowledge of the arts, technology and related human sciences

- IA2 – Understand the role of fine arts as a factor that can influence the quality of architectural design

3. COURSE CONTENT

Course modules	Total number of classes, credits, and hours
The soul of the tree. *Understanding Wood* (see references) Cabinetmaking and/or woodworking (short history of wooden furniture I)	1 class (4 hours)
Roman woodworking (see references) Cabinetmaking and/or woodworking (short history of wooden furniture II)	1 class (4 hours)
Spanish *carpintería de armar* I (trip to San Antonio el Real, Segovia)	1 trip (4 hours)
Spanish *carpintería de armar* II (trip to Pastrana, Guadalajara)	1 trip (4 hours)
Timber frames in Europe and America (Tudor, *balloon-frame*, *Amish raising a barn*). Timber frame in Madrid aprox. (1730-1900) and similar systems used throughout Europe	1 class (4 hours)
Ancient and modern Japan	1 class (4 hours)
Woodworking workshop	1 class (4 hours)
Presentation of works done by the students	1 class (4 hours)
Total 8 classes	4 ECTS

4. LEARNING AND TEACHING METHODS- FORMATIVE ACTIVITIES

Introduction:

- Case studies and trips (theory)
- Development of the individual task by the student (practice)

4.1. Distribution of credits (specified in hours)

Number of contact hours: 32 hours	Theory classes in large and small groups. Theory, practical activities, exhibition of works and feedback sessions
Number of student self-study hours: 68 hours	Includes tutorials, study hours, preparing activities, exam preparation, online activities
Total: 4 ECTS (1.5 theory + 2.5 practical) 100 hours	

4.2. Methodological strategies, materials and didactic resources

Theory classes:	Case studies and examples
Feedback sessions:	Group (presentation on screen and board) and individual (desk)
Materials and resources:	The classroom: screen, blackboard, cork board, desks Other: trips to Segovia and Pastrana

5. EVALUATION: Procedures, assessment and grading criteria

Grades will be based on continuous assessment of the virtual model, plus one regular exam and one special exam.
The continuous assessment, class attendance, as well as enthusiasm and participation in classes will be taken into account; the individual task done by the student will of course be considered.
The student´s grade, based on a numeric scale from 1 to 10 as detailed below (both in relation to the course and the exams), will be decided based on assessment of the following factors by the teacher or teachers:

- General understanding of the subject	33%
- Development of ideas, application and originality	33%
- Participation in feedback sessions	33%

Rating scale:
- Distinction: excellent grasp of basic concepts, high level of reflection and application, development of original ideas, completion of all tasks, team work, finding of complementary materials
- Merit: great level, above the average, originality
- Notable: strong understanding, average level of reflection
- Pass: sufficient knowledge and understanding
- Fail: low level of understanding and application, lack of commitment to the task, little participation in the group

Course evaluation procedures:
- Continuous assessment of all tasks
- Exams

Regular and special exams:
The exams will repeat the individual task done by the model

6. REFERENCES

GLAESER, Ludwig (1977). *Ludwig Mies van der Rohe: furniture and furniture drawings from the Design Collection and the Mies van der Rohe Archive, The Museum of Modern Art, New York* (New York: MOMA).

GROPIUS, Walter (1948). "Teaching the arts of design". *College Art Journal* 7(3), págs. 160-164.

HOADLEY, R. Bruce (2000 [1980]). *Understanding wood: A craftsman's guide to wood technology* (New York: Taunton Press).

HARRIS, Richard (1978). *Discovering Timber-Framed Buildings* (Shire classics).

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LUCIE-SMITH, Edward (2008 [1979]. *Furniture. A concise history* (London: Penguin).

NAKASHIMA, Georges (2012 [1981]). *The soul of a tree: A master woodworkers reflections* (New York: Kodansha America).

NAKASHIMA, Mira (2003). *Nature Form & Spirit: The Life and Legacy of George Nakashima* (New York: Harry N. Abrams).

MIES VAN DER ROHE, Ludwig (1992). *Escritos, diálogos, discursos* (Murcia: Colegio Oficial de Aparejadores y Arquitectos Técnicos de Murcia).

NUERE, Enrique, (2008 [1989]). *La carpintería de armar española* (Madrid, MunillaLería).

SEIKE, Kiyosi (1977). *The art of Japanese joinery* (Boston, London: Weatherhill).

SCHEA, John G. (1992 [1971]). *Making authentic Shaker furniture* (Mineola, New York: Dover Publications).

SIEBENBRODT, Michael y Lutz SCÖBE, *Bauhaus. 1919-1933 Weimar-Dessau-Berlin* (Parkstone International).

SCHMITT, Heinrich (1961). *Tratado de construcción* (Barcelona: Gustavo Gili), págs. 345-390 y 400-424.

ULRICH, Roger B. (2007). *Roman woodworking* (New Haven and London: Yale University Press).

YORKE, Trevor (2010). *Timber framed buildings explained* (Newbury Berkshire).

Journals: *Arquitectura Viva*, *AV Monografías*, *Architectural Design*, *AA Files*, *Casabella*, *Detail*, *Tectónica*, *Finewoodworking*, etc.

Interviews: Archives of American Art (Smithsonian Institution; https://www.aaa.si.edu/). They are an extraordinay source of information on the activity of contemporary architects, artists and cabinetmakers. Especially relevant for the subject are the interviews with Ray Eames (28th July – 20th August 1980), Sam Maloof (10th-11th January 2002) and James Krenov (12th-13th August 2004).

ANEXO PARA LA ASIGNATURA:

ARCHITECTURE AND WOOD

Código:

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