VNIVERSITAT DE VALÈNCIA

Course Guide
33875 Techniques and conservation of real estate

COURSE DATA

Data Subject	
Code	33875
Name	Techniques and conservation of real estate
Cycle	Grade
ECTS Credits	6.0
Academic year	2022 - 2023

Study (s)

Degree	Center	Acad. year	Period
1006 - Degree in History of Art	Faculty of Geography and History	2	Second term

Subject-matter

Degree	Subject-matter	Character
1006 - Degree in History of Art	12 - Basic training: instrumental knowledge of History of art	Basic Training

Coordination

Name	Department
JIMENEZ HORTELANO, SONIA	230 - Art History
SANCHEZ MUÑOZ, DAVID ELIAS	230 - Art History

SUMMARY

Study of the main building materials and their application in architecture, based on a chronological development of the main building elements.

Analysis of major construction techniques of architectural history. Knowledge of the main materials, components and structures built along the main periods from antiquity to modern times

Introduction of basic concepts, such as the wall, support systems, covering and other architectural elements.

The aim is to understand the use of the materials and the building process from the technical point of view. This technical knowledge will develop concepts and criteria for conservation of built heritage

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

There are no specified enrolment restrictions with other subjects of the curriculum

OUTCOMES

1006 - Degree in History of Art

- Saber aplicar los conocimientos instrumentales aplicados a la Historia del Arte para interpretar y manejar gráficos, fotografías, imagen en movimiento, informática y materiales de la obra de arte.
- Saber aplicar los conocimientos sobre documentación, composición de materiales y técnicas constructivas en el estudio y gestión de los bienes artísticos muebles e inmuebles.
- Saber aplicar los conocimientos comprensivos de idiomas modernos, incidiendo en el vocabulario técnico.
- Capacidad de lectura del entorno a partir del análisis, observación y deducción de la información procedente de las obras artísticas producidas a lo largo de la historia.
- Capacidad para reunir e interpretar datos relevantes y emitir juicios que incluyan una reflexión sobre aspectos de la producción artística en sus diferentes facetas.
- Tomar contacto directo con las obras artísticas mediante visitas a los monumentos históricos, museos y exposiciones que muestran al público este tipo de obras.

LEARNING OUTCOMES

Acquire the necessary basic knowledge of construction techniques. The acquisition of such information will be an instrument to develop skills of reading comprehension, critical reasoning and correctly handle terminology and technical vocabulary

Interpretation of plans and elevations of buildings

Achieve a comprehensive reading of the sources and bibliography

How to apply the knowledge on documentation, composition of materials and construction techniques in the study and management of artistic movable and immovable property

DESCRIPTION OF CONTENTS

1. Construction techniques in Mesopotamia

The clay as the main construction material. Types of use: adobe, adobe and brick. The mortar. Types of wall in the Mesopotamian culture. Roof systems, arches, vaults and false vaults in the Mesopotamian cultures.

2. Construction techniques in Egypt

Main building materials. Construction clay: mud, adobe and bricks. The monumental stone construction. Characteristics. Support Systems in Egypt: columns, pillars. Roof systems: lintel ceilings, false vaults

3. The pre-Hellenic cultures

Factory systems and walls. The situation in the Cretan and Minoan culture. The Persian world. The support systems. Types of cover

4. Greek Architectural Culture

Wall systems. The classic architectural orders. Solutions cover in Greece.

5. Roman culture

Materials and building walls. Roman opus. The introduction of concrete. The peculiar use of the classical orders in Rome. The debate on the use of arc segments. Greece, Etruria and Rome. Roof systems, stone vaults and concrete vaults

6. Early Christian cultures, Persian-Sasanian and Byzantine

The wall. The appearance of the cantilevered vault and the scallop. Roof systems. Tube vaults and domes.

7. Medieval times

Wall systems. The various support solutions. The introduction of new vaulting methods. roofs and Romanesque vaults. The introduction of the ribbed vault. Theories.

8. Modern times, Renaissance and Baroque architectural culture

Renaissance and Baroque architectural culture. Wall systems. The return to the classical orders. Cover solutions, new systems vaults and domes.

9. Construction techniques after the Revolution

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	45,00	100
Classroom practices	15,00	100
Attendance at events and external activities	5,00	0
Development of individual work	25,00	0
Study and independent work	25,00	0
Readings supplementary material	25,00	0
Preparation of practical classes and problem	10,00	0
TOTAL	**150,00**	

TEACHING METHODOLOGY

A. Three hours per week of in-class (face-to-face class), distributed as follows:

1.- Theoretical classes given by university lecturers (30 hours/course)

These classes will last three hours per week, in which teachers will expose the main aspects of the subject, systematizing contents and providing bibliographical references in order to prepare the final exam. It will be mandatory the preparation of materials, manuals and texts, which will be indicated previously The practical component will take place in these classes, (may be the commentary and analysis of texts or images relating to the subject)

B. To attend to workshops and complementary activities.

Compulsory attendance to an activity organized by the lecturer, such as museum, collection or monument visits, conferences or monographic seminars. To evaluate this section, a report must be submitted, according to the features and the structure provided by the lecturer prior to the activity. A portfolio must be submitted with all the activities within and outside the classroom for the final evaluation.

C. Non-scheduled tutor sessions.

Students may attend to tutor sessions on the hours designated by the lecturer for resolving doubts and queries related to the subject.

EVALUATION

Evaluation will be based on the following items:

1. Final exam, where knowledge of both theory and practice will be assessed
2. Assistence to theory and practice lessons.
3. Follow-up of theory and practice that will be monitored through case studies and reading assessments.
4. Personal and practical activities
5. Attendance to seminars or complementary activities

REFERENCES

Basic

- Castro, A., Historia de la construcción arquitectónica, UPC, 1995
- Mark, R., Tecnología arquitectónica hasta la revolución científica: arte y estructura de las grandes construcciones, Akal, 2002
- Ortega Andrade, F., Historia de la construcción, 4 tomos, Universidad de las Palmas de Gran Canaria, 1993-94
- Paniagua, Vocabulario básico de arquitectura, Cátedra, Madrid, 1982

Additional

- Adam, Jean Pierre, La construcción romana, materiales y técnicas, Editorial de los oficios, 1999
- Choisy, A., El arte de construir en Roma, CEHOPU, 1999
- Choisy, A., El arte de construir en Bizancio, CEHOPU, 2000
- Fitchen, J., The construction of Gothic Cathedrals, Oxford, 1961
- González-Varas, I, Conservación de bienes culturales. Teoría, historia, principios y normas, Cátedra, Madrid, 1999

- Graciani, A (ed.) La técnica de la arquitectura en la Antigüedad, Universidad de Sevilla, 1998
- Graciani, A., (Ed.) La técnica de la arquitectura medieval, Universidad de Sevilla, 2001
- Heyman, J., Teoría, historia y restauración de estructuras de fábrica, CEHOPU, 1995
- Rabasa, E., Forma y construcción en piedra. De la cantería medieval a la estereotomía del siglo XIX, Akal, 2000
- Viollet-le-Duc, E., La construcción medieval, ed. CEHOPU, 1996
- VV. AA., Historia de las técnicas constructivas en España, FCC, 2000
- Müller, W. I Vogel, G., Atlas de arquitectura, Alianza, Madrid, 1984
- Ching, FDK, Diccionario visual de Arquitectura, Gustavo Gili, 1997
- Rico, L., i Martínez, C., (ed.) Diccionario Técnico de conservación y restauración de bienes culturales, Madrid, Akal, 2003
- Taylor, R., Los constructores romanos, un estudio sobre el proceso arquitectónico, Akal, 2006.
- Aguilar Civera, I. Arquitectura industrial. Concepto, método y fuentes. València, Museu d'Etnologia, 1998.
- Aguilar Civera, I., El discurso del ingeniero en el siglo XIX: aportaciones a la historia de las obras públicas, Madrid-València, Fundación Juanelo Turriano, Consellería de Infraestructuras, Territorio y Medio Ambiente, 2012.
- Cerdà, M., Arqueologia industrial. València, Universitat de València, 2008.
- Cerdà, M. y Martí Bonafé, M., Enciclopedia Valenciana de Arqueología Industrial, València, Edicions Alfons el Magnànim, 1995.
- Alonso Pereira, José Ramón. Introducción a la historia de la arquitectura. De los orígenes al siglo XXI. Barcelona: Editorial Reverté, 2005.
- Aguilar Civera, Inmaculada, Arquitectura industrial. concepto, método y fuentes, València, Museu d'Etnologia, 1998