Course guides

210292 - DAIIP - Documentation, Analysis and Interpretation of the Architectural Heritage. Architectural Surveying Techniques

Unit in charge: Barcelona School of Architecture
Teaching unit: 752 - RA - Departamento de Representación Arquitectónica.
753 - TA - Department of Architectural Technology.
756 - THATC - Department of History and Theory of Architecture and Communication Techniques.

Degree: DEGREE IN ARCHITECTURE STUDIES (Syllabus 2014). (Optional subject).

Academic year: 2021  ECTS Credits: 3.0  Languages: Catalan, Spanish

LEcTURER

Coordinating lecturer: Galdric Santana Roma

Others: Enric Granell
Belén Onecha

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
EAB1. Translation from Spanish slope
EAB11. Translation from Spanish slope
EAB2. Translation from Spanish slope
EAB3. Translation from Spanish slope
EAB5. Translation from Spanish slope
EAB6. Translation from Spanish slope
EP11. Translation from Spanish slope
EP12. Translation from Spanish slope
EP13. Translation from Spanish slope
EP15. Translation from Spanish slope
EP20. Translation from Spanish slope
EP21. Translation from Spanish slope
EP22. Translation from Spanish slope
EP23. Translation from Spanish slope
EP26. Translation from Spanish slope
EP3. Translation from Spanish slope
EP4. Translation from Spanish slope
EP8. Translation from Spanish slope
ET10. Translation from Spanish slope
ET14. Translation from Spanish slope
ET17. Translation from Spanish slope
ET3. Translation from Spanish slope
ET4. Translation from Spanish slope
ET5. Translation from Spanish slope

General:
CG1. Translation from Spanish slope
CG2. Translation from Spanish slope
CG4. Translation from Spanish slope
Transversal:
CT3. Translation from Spanish slope
CT4. Translation from Spanish slope
CT5. Translation from Spanish slope
CT6. Translation from Spanish slope

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

Know, practice and apply current techniques for metric survey: static and dynamic photogrammetry (dense stereo matching); 3D Laser-scanner.
Work on photometric restitution for surveys of the disappeared heritage, documented in historical photography.
Determine a post-production based on the documentary intention of the heritage (diagnostic, forensic, illustrative)
Reach an interpretive result of the heritage (analysis of results, visual, acoustic, geometric, historical, etc ...)

STUDY LOAD

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours large group</td>
<td>33,0</td>
<td>44.00</td>
</tr>
<tr>
<td>Self study</td>
<td>42,0</td>
<td>56.00</td>
</tr>
</tbody>
</table>

Total learning time: 75 h
CONTENTS

Line of intervention in the heritage. Surveying techniques, documentation and analysis

Description:
It is about knowing, practicing and applying current survey techniques: static and dynamic photogrammetry (dense stereo matching); Laser scanner. Likewise, photometric restitution is being worked on for surveys of the disappeared heritage, documented in historical photography. The application of these techniques is executed and post-produced according to the documentary, diagnostic, forensic, illustrative intention, reaching an interpretive purpose of the heritage, that is, an analysis of results, visual, acoustic, geometric, historical, etc. ..
The practice of the subject is based on and complemented by the presentation of professional assignments of the responsible teacher, (active and completed) executed mainly in Gaudí’s architectural work.

Metro-PHOTO RESTITUTION:
It is a traditional application of Descriptive Geometry (Architectural Geometry). It becomes the origin of the Photogrammetry technique. It is for this reason, that also from the didactic point of view, their basic knowledge is adequate. It is a fundamental technique in the context of heritage, since it allows metrically to restore images of disappeared architecture.

COMBINED RESTITUTION:
It is the work of metro-photographic restitution, combined with photogrammetry or LIDAR scanning, in a virtual 3D modeling environment. Its application becomes optimal in a combined context between existing and missing heritage.

DIGITAL PHOTOGRAMMETRY:
Technique that has evolved on a large scale with respect to the traditional technique as a consequence of the digital capture of images, and the possibility of managing the data of large sets of photographs that current sensors allow. Its application is essential in the survey of architectural heritage, and its elements.
High resolution digital photogrammetry (Gigaphotogrammetry) allows the documentation of macroscopic detail. Its origins are the documentation of pictorial art, to distinguish and recognize the originals with respect to the copies.

SCANNER-LASER:
The use of LIDAR technology, allows exhaustive obtaining of points, in a great scope. However, its effectiveness implies devices with a high economic cost. However, knowledge and experience with this type of media are necessary, and thus it is arranged in this course to carry out at least one capture and post-production practice.

ANALYSIS and INTERPRETATION:
The lifting techniques exposed and treated in the course, beyond their capacity and documentary adequacy, are developed through the presentation of real orders, which go beyond the strict documentation, becoming examples of analysis and interpretation of the heritage object.

Full-or-part-time: 3h
Theory classes: 1h
Practical classes: 1h
Guided activities: 1h
GRADING SYSTEM
EVALUATION SYSTEM
Continuous assessment
Continuous assessment will be based on the work carried out by the student during the academic year, through the submission of assignments or the performance of written and/or oral tests, according to the criteria and timetable established.
Final assessment
If the continuous assessment is not positive, a second assessment may be carried out, which will consist of a final overall test in the established methodology according to the criteria of the lecturer in charge (written or oral test and/or submission of assignments).
Telematic continuous assessment
In online teaching situations, continuous assessment will be carried out synchronously and asynchronously, by the methods established by the University and the School, with a periodic record of academic activity by submitting assignments, forums, questionnaires or any other means provided by the Atenea platform, or the alternative tools provided to the teaching staff. In situations in which this telematic teaching takes place when face-to-face teaching has already begun, or for non-academic reasons, any alterations to the weightings or regular teaching control systems will be communicated in detail to all students on the Atenea platform for every subject.
Final telematic assessment
If the continuous telematic assessment is not positive, a second assessment may be carried out consisting of a final overall test in telematic format to be established in accordance with the criteria of the lecturers in charge and the ICT resources and tools provided by the University or the School.
The measures for adapting to distance teaching will be implemented in accordance with ICT security and personal data protection criteria to ensure compliance as regards Personal Data Protection legislation (RGPD and LOPDGDD).

BIBLIOGRAPHY
Basic: