COURSE DESCRIPTION
SURVEY OF ARCHITECTURE

SSD: DISEGNO (ICAR/17)

DEGREE PROGRAMME: ARCHITETTURA (N14)
ACADEMIC YEAR 2022/2023

COURSE DESCRIPTION

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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 8

REQUIRED PRELIMINARY COURSES

Fondamenti e applicazioni di Geometria Descrittiva

PREREQUISITES

Knowledge and use of techniques and methods of representation (2D and 3D).

LEARNING GOALS

The course intends to provide students with the knowledge and methodological tools necessary to survey and document an architecture in its complexity. The objectives are to provide students the fundamental notions in order to be able to deal with the analysis of an architectural system, illustrate the theoretical principles of architectural survey and lead students to learn the processes of direct and indirect, photogrammetric and digital 3D measurement aimed to knowledge and representation of the built environment, to its meanings and its intrinsic values.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The expected learning outcomes are: being able to critically read an architecture; be able to adequately formulate a survey project, contemplating the use of the most appropriate methods in relation to the context, the object of study and the purposes of the survey; know the survey tools and methods from the traditional ones to the most recent evolutions related to the use of new technologies; knowing how to appropriately represent the results of a survey, documenting the meanings of architecture in appropriately themed written and visual/numerical documents, contemplating the quantitative and qualitative data.

In particular, students must demonstrate that they understand the meanings of architecture, as well as the problems and implications relating to the various survey methods, starting from traditional acquisition methods up to the latest generation ones.

Applying knowledge and understanding

Students must demonstrate that they are able to practically carry out metric, photogrammetric, instrumental and perceptive survey operations, as well as develop thematic surveys and produce written and visual/numerical documents capable of returning the quantitative and qualitative values of architecture. The training course is aimed at transmitting the operational skills necessary to concretely apply the knowledge and to foster the ability to make full use of the methodological tools.

FURTHER EXPECTED LEARNING OUTCOMES, relating to:

- judgment independence: the student must be able to know how to set up a survey project, autonomously evaluating the most appropriate acquisition methodologies and methods of representation and proposing solutions consistent with the object of study and the specificities related to it ;
- communication skills: the student must be able to present the results of the survey and summarize the results achieved in a complete but concise manner using the technical language correctly. The student is stimulated to elaborate a survey project with clarity and rigor and to deepen the methods studied, to familiarize himself with the terms of the discipline, to express the contents and the application possibilities with correctness and simplicity;
- learning ability: students must be able to update and expand their knowledge by independently drawing on texts, scientific articles, starting from the content of the lessons and from the texts suggested during them.

COURSE CONTENT/SYLLABUS

The course proposes an analytical method of investigation, intended as a system of rules consistent with the object being investigated which allows to derive the meanings of reality through the metric and qualitative analysis of architecture, with the aim of making explicit, in the representation, the logical articulation, the formal and constructive structure, going back to the matrixes of its compositional, technical, qualitative, material, metric and geometric results. This will be possible through the adoption of integrated procedures which, starting from the visual survey, created through sketches and schematic graphic models, experiment the different methods of survey, from the direct one carried out through the use of traditional tools, to the indirect one which

makes use of new technologies.
Subjects
Fundamentals of the discipline, finalities of survey, scales of survey.
Reading architecture: parts and elements, layout geometries.
Measurement: elements of metrology, error and uncertainty in surveying.
Cartographic references: historical cartography and current cartography.
Photography in survey.
Survey and representation of the vaults.
Direct survey: methods and tools for direct planimetric and direct altimetric survey.
Photogrammetric survey: terrestrial and aerial photogrammetry, methods for photographic shooting and data processing.
3D digital survey: laser scanner survey
Indirect survey: methods and tools for indirect survey.
GPS survey.
Themes: materials survey, cromatic survey, xstructural survey, masonry survey, degradation survey, diagnostic survey.

READINGS/BIBLIOGRAPHY

The teaching material will be provided during the lessons with online references and with the most recent articles relating to researches in the field of surveying.
Reference text:
M. DOCCI, D. MAESTRI, *Manuale di rilevamento architettonico,* Laterza, Roma-Bari, 2004

TEACHING METHODS OF THE COURSE (OR MODULE)

The course is divided into theoretical lessons, practical exercises relating to the topics covered, site inspections for the metric and photographic survey and meetings for the revisions of the graphic drawings illustrating the assigned building and the survey methods and procedures adopted. The work can be done individually, or in groups freely organized by the students and made up of two or at most three members.

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- ☐ Written
- ☑ Oral
- ☑ Project discussion
- ☐ Other

In case of a written exam, questions refer to

- ☐ Multiple choice answers
- ☐ Open answers
- ☐ Numerical exercises

b) Evaluation pattern

The final exam consists of an oral test on the topics covered, in the evaluation of the graphic works relating to the exercises carried out during the course and in the evaluation of the drawings drawn up as a survey and representation application work.

In the exam, the following will be evaluated: the completeness and accuracy of the contents, the mastery of the concepts and the clarity of the presentation, the correctness of the graphic drawings and the ability to know how to adequately illustrate them in relation to the relevant procedures adopted.