



COURSE DESCRIPTION ECONOMICS AND ENVIRONMENTAL ESTIMATE

SSD: ESTIMO (ICAR/22)

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

COURSE DESCRIPTION

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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: 07142 - LABORATORIO DI SINTESI FINALE
MODULE: 52888 - ECONOMIA ED ESTIMO AMBIENTALE
CHANNEL:
YEAR OF THE DEGREE PROGRAMME: V
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 4

REQUIRED PRELIMINARY COURSES

Courses preparatory to the Final Synthesis Laboratory

PREREQUISITES

Nothing

LEARNING GOALS

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The Final Synthesis Laboratory consists of courses in: Architectural and Urban Design, Urban Planning, Technologies for Construction, Technologies for Construction Environmental Control, Executive Design, and Environmental Economics and Evaluation. The multiplicity of aspects covered enables students to develop a proposal for the transformation of the existing asset by exploring the various levels of complexity of the project in its entirety. The Final Synthesis Laboratory aims to:

- improve students' design skills through work based on a critical-interpretative approach to places and methodological-experimental approach to setting the intervention strategy;
- provide methods and tools for dealing with architectural design by controlling the process of its definition and development from the urban to the detailed scale.

The Environmental Economics and Evaluation course aims to make students acquire, in depth, the methodological approaches and operational tools for the evaluation of design alternatives (through multicriteria evaluations) and for the elaboration of a financial feasibility study of an architectural project, articulated in its different phases (technical and economic feasibility, final and executive).

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

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Knowledge and understanding

The "Environmental Economics and Evaluation" course aims to provide students with the methodological approaches and operational tools to develop a financial feasibility study of an architectural project, articulated in its different phases. The assessment takes into account the acquired methodologies also with reference to the application work developed in relation to the topic of the Final Synthesis Laboratory. The expected results refer to the acquisition of skills for the analysis and assessment of the financial feasibility of architectural projects. In particular:

- the estimation of production costs of the architectural product;
- the socio-economic analysis of the context in which the project will be implemented to define the intended uses;
- the multidimensional evaluation of project alternatives.

Learning ability: The student has to be able to update or expand his/her knowledge by drawing independently on scientific texts and papers, and has to be able to gradually acquire the ability to attend specialized seminars, conferences, master's degrees, etc. in the field of valuation and economics. The course provides the student with necessary guidance and suggestions to enable him/her to deal with other topics related to those in the program.

Communication skills: The student has to be able to illustrate the work produced highlighting the results achieved, using the terms proper to the discipline. The student's expository skill has to be such as to communicate, even to non-experts in the subject, the procedure adopted and the possible alternatives in a clear and concise way.

Applying knowledge and understanding

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Ability to apply knowledge and understanding: The student is expected to demonstrate knowledge and understanding of the procedures for assessing construction costs at the various design levels, and of the various expenditures that contribute to production costs. The student has to be able to synthesize the data collected into information useful for financial and socio-economic analysis of the project, as well as develop outcome and performance indicators for a multicriteria evaluation of impacts.

Autonomy of judgment: The student has to be able to independently assess the market dynamics

behind project choices so as to propose new solutions that are more financially and socio-economically convenient. The student has also to be able to understand the logical links between objectives, project and results, including through the choice of performance and outcome indicators.

COURSE CONTENT/SYLLABUS

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Section one (2 CFU): Cost estimation. Work scheduling (parametric costs). Design of works (time schedule and economic framework). Technical and economic feasibility design (summary costing, standardized costs). Final and executive design (estimated metric calculation and price analysis).
Section Two (2 CFU): Evaluation of design alternatives. Financial analysis and cost-benefit analysis (Net Present Value; Internal Rate of Return; sensitivity analysis and risk analysis). Multidimensional evaluations (multicriteria and multigroup). Travel Cost Method, Contingent Valuation Method and Haedonic Price Method for the estimation of influential externalities. Examples of evaluation for architectural design.

READINGS/BIBLIOGRAPHY

Book and teaching materials posted on the teacher's webpage.

TEACHING METHODS OF THE COURSE (OR MODULE)

The course will be implemented in: a) face-to-face lectures for about 50%of the total hours; b) laboratory for the development of the design work by students for 50% of the total hours.

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

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The exam consists of the discussion of the design work. The final mark will be weighted on the CFU of each course and thus composed as follows: Urban architectural design (8CFU), Urban planning (4CFU), Executive design (4CFU), Technologies for Construction (2CFU), Technologies

for Construction Environmental Control (6CFU), Environmental Economics and Evaluation (4CFU).