# COURSE DESCRIPTION
# ARCHITECTURAL AND URBAN COMPOSITION

# SSD: COMPOSIZIONE ARCHITETTONICA E URBANA (ICAR/14)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5518 - LABORATORIO DI PROGETTAZIONE ARCHITETTONICA E URBANA
MODULE: U2542 - COMPOSIZIONE ARCHITETTONICA E URBANA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 8

### REQUIRED PRELIMINARY COURSES

Architectural Design Studio 2

### PREREQUISITES

There are no prerequisites.

### LEARNING GOALS

The aim is to teach practical and theoretical aspects of the project through a design experiment to be carried out on a hybrid building located in ‘regenerated’ areas of the city and to combine the project's key points with aspects related to the evaluation of construction costs.

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

Students learn topics concerning architectural composition (distributive, typological, morphological and linguistic) through theoretical lessons, seminars, site visits and workshop activities. Following the learning processes, students realize the relationships with other disciplines that contribute to the formation of the architectural project, particularly with regard to the aspects of evaluation of construction costs. The ability to apply some of the knowledge acquired in this field will be realized through the design activities in the Architectural Design Studios in the following years.

**Applying knowledge and understanding**

Students develop the ability to methodically structure design activities by dealing with different levels of complexity in architectural projects. They also develop the ability to apply economic and evaluative knowledge to design activities dealing with different areas of application of architectural and urban design.

## COURSE CONTENT/SYLLABUS

Architecture interprets social, historical, and cultural dynamics and, through design, provides a subjective and concise vision of the city, subsequently determining, through the act of construction, an action charged with great civic responsibility. Consolidating this awareness and contributing to the development of the disciplinary tools students already possess are goals that the project developed during the Design Workshop aims to achieve. Specifically, the course aims to address the complexities of architectural design as a tool for understanding and refining technical and construction skills, fostering a dialogue between historical stratification, modernist poetics, and the contributions of contemporary research on the language of architecture. Furthermore, the relationship between nature and the city, between topography and urban space, and between cultural identity and place constitute additional knowledge tools useful to the project. The project theme, therefore, consists of an architecture capable of interpreting these relationships following specific geographical and urban analysis. The city of Avellino displays unique characteristics from these perspectives, therefore, an area on the border of the historic center and characterized by a strong connection to a natural setting was chosen as the project site, with the aim of building new relationships within the city. The wine culture, typical of the geographical area, determines the functional program of the project building. The design proposal, therefore, will be shaped by actions that precede and influence the formal outcome, namely the correct interpretation of the project's objectives, the analysis of the specificities of the area and the context, and the dialogue between modernist language and the identity of the place. A further key element of the course's teaching structure is the adoption of the analysis of architecture from different eras as a design tool, in search of design solutions that transcend time.

## READINGS/BIBLIOGRAPHY

G. Foti, C. Pagliaro, D. Peruzzo, L.Semerani, *Progetto eloquente*, Marsilio editori, Venezia, 1981;
K.Frampton, *Storia dell'architettura moderna*, Zanichelli, quarta edizione, 2008;
B. Zevi, *Saper vedere l'architettura. Saggio sull'interpretazione spaziale dell'architettura*, Einaudi, ed. 2009;

S. Holl, *Urbanism. Working with doubt*, Princeton Architectural Press, 2009;
A. Rossi, *Scritti scelti sull'architettura e la città 1956-1972*, Quodlibet, Macerata, 2012;
R. Clark, M. Pause, *Precedents in Architecture: Analytic Diagrams, Formative Ideas and Partis* , John Wiley &Sons, 2012;
C. Diener, J. Herzog, M. Meili, P. de Meuron, M. Herz, C. Schmid, M. Topalovic, *The Inevitable Specificity of Cities*. ETH Studio Basel, 2015;
S. Mancuso, *Fitopolis, la città vivente,* Editori Laterza, 2023

## TEACHING METHODS OF THE COURSE (OR MODULE)

In addition to the design activity to be carried out in the classroom, the hours of the Architectural and Urban Composition module will be administered in such a way as to guarantee an adequate number of lessons that will address critical and theoretical issues. Among these, a first group will deal with the reading of the study area and the project needs; the second will retrace the analysis of the elements of architectural and urban composition; finally, the third group of lessons, parallel to the second, will have as its purpose the critical analysis of works related to the different declinations of modern poetics in the project of contemporary architecture, assumed as possible references for the project of the Architecture Design Studio Course. In fact, during the theoretical and design process, constant attention will always be paid to similar themes but differently declined for historical and geographical conditions.

## 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 evaluation will be balanced between the credits for the Architectural and Urban Design Module, corresponding to 8 ECTS and the Valuation Module, corresponding to 4 ECTS.

# COURSE DESCRIPTION
# ARCHITECTURAL AND URBAN COMPOSITION

# SSD: COMPOSIZIONE ARCHITETTONICA E URBANA (ICAR/14)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5518 - LABORATORIO DI PROGETTAZIONE ARCHITETTONICA E URBANA
MODULE: U2542 - COMPOSIZIONE ARCHITETTONICA E URBANA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 8

### REQUIRED PRELIMINARY COURSES

Design Studio second year

### PREREQUISITES

There are no prerequisites.

### LEARNING GOALS

The aim is to teach practical and theoretical aspects of the project through a design experiment to be carried out on a hybrid building located in ‘regenerated’ areas of the city and to combine the project's key points with aspects related to the evaluation of construction costs.

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

Students learn topics concerning architectural composition (distributive, typological, morphological and linguistic) through theoretical lessons, seminars, site visits and workshop activities. Following the learning processes, students realize the relationships with other disciplines that contribute to the formation of the architectural project, particularly with regard to the aspects of evaluation of construction costs. The ability to apply some of the knowledge acquired in this field will be realized through the design activities in the Architectural Design Studios in the following years.

**Applying knowledge and understanding**

Students develop the ability to methodically structure design activities by dealing with different levels of complexity in architectural projects. They also develop the ability to apply economic and evaluative knowledge to design activities dealing with different areas of application of architectural and urban design.

## COURSE CONTENT/SYLLABUS

The aim of the course is to introduce students to the understanding, control and composition of a system of spaces that will contribute to the creation of a building intended for residential construction and common areas designed for socialising. The project area will be located in one of the “unresolved” areas of the urban fabric of the city of Naples. Through their work on the project, students will be encouraged to acquire a critical method useful for questioning, choosing and constructing design themes focused on the character of architecture, i.e. its ability to construct space around people, relating this space to its purpose: its ability to be inhabited. Critical practice will seek the most appropriate solution, starting from an in-depth investigation of the theme which, in accordance with the rules of architectural construction, will lead the project to define its form. In this process, method and critical spirit destabilise each other, constantly and repeatedly put to the test by the task at hand. The different scales of the proposed theme will offer the educational opportunity to explore the project from the urban scale down to the detail, in order to measure its consistency with the set of compositional choices made. At the same time, the problems of drawing, as well as any other form of representation and modelling of space, will be addressed by seeking to define a communication strategy that bridges the gap between graphic abstraction and the actual physical configuration of architecture.

## READINGS/BIBLIOGRAPHY

In addition to owning and using a manual such as Ridolfi, USIS-CNR or Neufert and an illustrated book on the history of architecture, below is a list of bibliographical references. Further specific readings will be indicated as necessary and as the course progresses; however, it will be up to each student to learn how to build their own personal library as their practical interests and cultural stimuli grow. In addition to the bibliography, digital texts and teaching materials useful for carrying out the exercises will be provided. All materials will be available in the files section of the course Teams channel.

Bibliography

A. Campo Baeza, Light is much more, available in:
https://oa.upm.es/38937/1/INVE_MEM_2014_215223.pdf

A. Loos, Parole nel Vuoto, Adelphi, Milano 1992.
A. Rossi, Introduzione a E-L. Boullée, Architettura. Saggio sull'arte, Einaudi, Torino 2005.
Le Corbusier, Verso un'architettura, Longanesi, Milano 2003.
L. I. Kahn, Architettura è, M. Bonaiti (ed.), Electa, Milano 2002.

## TEACHING METHODS OF THE COURSE (OR MODULE)

The didactic activity will be organised in exercises (each concluded by a collective verification) that will concern the main moments identifiable in the design process:
- analysis of the context and identification of the programme;
- first morphological type choices;
- the ordering paths and components, rules, exceptions, moments of singularity.
- verifications: critical/design exercises on the functional, constructive and compositional aspects and the recomposition of the design idea for the examination.

The design activity will be carried out in the classroom in accordance with the timetable scheduled for each exercise, in order to complete the year's theme by the end of the course. The majority of the course hours will be dedicated to the workshop, whose activities will be supported by theoretical lectures given by the course's reference professor and external professionals and professors.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [ ] Written
- [ ] Oral
- [x] Project discussion
- [x] Other : Exam exibition

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers
- [ ] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

The evaluation will take into account not only the quality of the project and its graphic rendering, but also the student's growth path with respect to the products rendered for each exercise, his or her ability to acquire a critical method useful for working on design issues and the skills acquired in the use of construction principles as the main tools for the composition of space. The evaluation will take into account, together with the results of the design experimentation, the skills and knowledge acquired thanks to the disciplinary contributions deriving from the Integrative Module of Quantity Surveying. The examination will take the form of an exhibition of the course projects. In addition to the professor and tutors, external professors and professionals will be involved in the final critique of the project experiments. During the examination, the students will present the work carried out by means of graphs, models and digital models useful for describing the choices that

guided the design process and the result achieved. The didactic activity will be organised in exercise-tests (each concluded by a collegial assessment) that will cover the main moments identifiable in the design process and between which the number of CFUs of the final examination will be divided:
- Context analysis and identification of the design theme through the study of section hypotheses; Time location: beginning of the course (1 CFU)
- First morphological type choices; (1 CFU) Temporal collocation: beginning of the course (1CFU)
- Theme thematisation: the ordering paths and components, rules, exceptions, moments of singularity, i.e. marking the character that each theme can express; Timing: mid-course (1CFU)
- Tests: critical/design exercises on functional, constructive, compositional and estimative aspects; Time allocation: mid-course (1 CFU)
- Recomposition of the project idea due to the maturation of the project activated through the verifications and drafting of the examination papers; Time allocation: end of course (4 CFU)

# COURSE DESCRIPTION
# URBAN APPRAISAL AND PROJECT EVALUATION

# SSD: ESTIMO (ICAR/22)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5518 - LABORATORIO DI PROGETTAZIONE ARCHITETTONICA E URBANA
MODULE: U5519 - ESTIMO URBANO E VALUTAZIONE DEI PROGETTI
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 4

### REQUIRED PRELIMINARY COURSES

Architectural Design Studio 2

### PREREQUISITES

There are no prerequisites.

### LEARNING GOALS

The aim is to teach practical and theoretical aspects of the project through a design experiment to be carried out on a hybrid building located in ‘regenerated’ areas of the city and to combine the project's key points with aspects related to the evaluation of construction costs.

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

Students learn topics concerning architectural composition (distributive, typological, morphological and linguistic) through theoretical lessons, seminars, site visits and workshop activities. Following the learning processes, students realize the relationships with other disciplines that contribute to the formation of the architectural project, particularly with regard to the aspects of evaluation of construction costs. The ability to apply some of the knowledge acquired in this field will be realized through the design activities in the Architectural Design Studios in the following years.

**Applying knowledge and understanding**
Students develop the ability to methodically structure design activities by dealing with different levels of complexity in architectural projects. They also develop the ability to apply economic and evaluative knowledge to design activities dealing with different areas of application of architectural and urban design.

## COURSE CONTENT/SYLLABUS

1. Estimation and valuation (1 CFU): The principles of estimation theory. Economic aspects of assets. Use value, market value, cost value, complementary value, transformation value, subrogation value. Sustainable development and valuations. Total Economic Value and Complex Social Value.
2. Elements of microeconomics and financial mathematics (1 CFU): Production cost theory, market models, consumer and producer surplus, company equilibrium, financial mathematics.
3. Appraisal Procedures (2 CFU): Analytical procedures for estimating the market value of a properties, agricultural lands, and building areas. Synthetic and intermediate procedures for estimating the market value of a property. Analytical, synthetic and intermediate procedures for estimating the cost value of building, urban and infrastructure interventions. International valuation standards.

## READINGS/BIBLIOGRAPHY

Lecturer’s teaching materials posted on the teacher’s webpage.

## TEACHING METHODS OF THE COURSE (OR MODULE)

Lectures and exercises. Laboratory design activities.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [x] Written
- [x] Oral
- [x] Project discussion
- [ ] Other

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers
- [x] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

The outcome of the written test is not binding for the purpose of the admission the oral exam; the number of answers will not be evaluated but their general correctness.
The final grade will be weighted on the CFUs of each teaching and thus composed as follows: Architectural Design Module 8CFU 66%, Estimation and Appraisal Module 4CFU 33%.

# COURSE DESCRIPTION
# URBAN APPRAISAL AND PROJECT EVALUATION

# SSD: ESTIMO (ICAR/22)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5518 - LABORATORIO DI PROGETTAZIONE ARCHITETTONICA E URBANA
MODULE: U5519 - ESTIMO URBANO E VALUTAZIONE DEI PROGETTI
TEACHING LANGUAGE: ITALIANO
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 4

### REQUIRED PRELIMINARY COURSES

Design Studio second year.

### PREREQUISITES

There are no prerequisites.

### LEARNING GOALS

The aim is to teach practical and theoretical aspects of the project through a design experiment to be carried out on a hybrid building located in ‘regenerated’ areas of the city and to combine the project's key points with aspects related to the evaluation of construction costs.

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

Students learn topics concerning architectural composition (distributive, typological, morphological and linguistic) through theoretical lessons, seminars, site visits and workshop activities. Following the learning processes, students realize the relationships with other disciplines that contribute to the formation of the architectural project, particularly with regard to the aspects of evaluation of construction costs. The ability to apply some of the knowledge acquired in this field will be realized through the design activities in the Architectural Design Studios in the following years.

**Applying knowledge and understanding**

Students develop the ability to methodically structure design activities by dealing with different levels of complexity in architectural projects. They also develop the ability to apply economic and evaluative knowledge to design activities dealing with different areas of application of architectural and urban design.

## COURSE CONTENT/SYLLABUS

*1. Estimation and valuation (1 CFU):* The principles of estimation theory. Economic aspects of assets. Use value, market value, cost value, complementary value, transformation value, subrogation value. Sustainable development and valuations. Total Economic Value and Complex Social Value.
*2. Elements of microeconomics and financial mathematics (1 CFU):* Production cost theory, market models, consumer and producer surplus, company equilibrium, financial mathematics.
*3. Appraisal Procedures (2 CFU):* Analytical procedures for estimating the market value of a properties, agricultural lands, and building areas. Synthetic and intermediate procedures for estimating the market value of a property. Analytical, synthetic and intermediate procedures for estimating the cost value of building, urban and infrastructure interventions. International valuation standards.

## READINGS/BIBLIOGRAPHY

Lecturer’s teaching materials posted on the teacher’s webpage.

## TEACHING METHODS OF THE COURSE (OR MODULE)

Lectures and exercises. Laboratory design activities.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [x] Written
- [x] Oral
- [x] Project discussion
- [ ] Other

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers

☑ Open answers

☐ Numerical exercises

**b) Evaluation pattern**

The outcome of the written test is not binding for the purpose of the admission the oral exam; the number of answers will not be evaluated but their general correctness.

The final evaluation will be balanced between the credits for the Architectural and Urban Design Module, corresponding to 8 ECTS 66% and the Urban Appraisal and Project Evaluation Module, corresponding to 4 ECTS 33%.

# COURSE DESCRIPTION
# URBAN APPRAISAL AND PROJECT EVALUATION

# SSD: ESTIMO (ICAR/22)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5518 - LABORATORIO DI PROGETTAZIONE ARCHITETTONICA E URBANA
MODULE: U5519 - ESTIMO URBANO E VALUTAZIONE DEI PROGETTI
TEACHING LANGUAGE: ITALIANO
CHANNEL: 03 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 4

### REQUIRED PRELIMINARY COURSES

Architectural Design Studio 2

### PREREQUISITES

There are no prerequisites.

### LEARNING GOALS

The aim is to teach practical and theoretical aspects of the project through a design experiment to be carried out on a hybrid building located in ‘regenerated’ areas of the city and to combine the project's key points with aspects related to the evaluation of construction costs.

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

Students learn topics concerning architectural composition (distributive, typological, morphological and linguistic) through theoretical lessons, seminars, site visits and workshop activities. Following the learning processes, students realize the relationships with other disciplines that contribute to the formation of the architectural project, particularly with regard to the aspects of evaluation of construction costs. The ability to apply some of the knowledge acquired in this field will be realized through the design activities in the Architectural Design Studios in the following years.

**Applying knowledge and understanding**

Students develop the ability to methodically structure design activities by dealing with different levels of complexity in architectural projects. They also develop the ability to apply economic and evaluative knowledge to design activities dealing with different areas of application of architectural and urban design.

## COURSE CONTENT/SYLLABUS

1. Estimation and valuation (1 CFU): The principles of estimation theory. Economic aspects of assets. Use value, market value, cost value, complementary value, transformation value, subrogation value. Sustainable development and valuations. Total Economic Value and Complex Social Value.
2. Elements of microeconomics and financial mathematics (1 CFU): Production cost theory, market models, consumer and producer surplus, company equilibrium, financial mathematics.
3. Appraisal Procedures (2 CFU): Analytical procedures for estimating the market value of a properties, agricultural lands, and building areas. Synthetic and intermediate procedures for estimating the market value of a property. Analytical, synthetic and intermediate procedures for estimating the cost value of building, urban and infrastructure interventions. International valuation standards.

## READINGS/BIBLIOGRAPHY

Lecturer’s teaching materials posted on the teacher’s webpage.

## TEACHING METHODS OF THE COURSE (OR MODULE)

Lectures and exercises. Laboratory design activities.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [x] Written
- [x] Oral
- [x] Project discussion
- [ ] Other

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers
- [x] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

The outcome of the written test is not binding for the purpose of the admission the oral exam; the number of answers will not be evaluated but their general correctness.
The final grade will be weighted on the CFUs of each teaching and thus composed as follows: Architectural Design Module 8CFU 66%, Estimation and Appraisal Module 4CFU 33%.

# COURSE DESCRIPTION
# TERRITORIAL PLANNING

# SSD: TECNICA E PIANIFICAZIONE URBANISTICA (ICAR/20)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5520 - LABORATORIO DI PIANIFICAZIONE TERRITORIALE E DATA ANALYSIS
MODULE: 00174 - PIANIFICAZIONE TERRITORIALE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 6

### REQUIRED PRELIMINARY COURSES

Urban PlanningFundamentals and Mathematical Analysis and Geometry

### PREREQUISITES

none

### LEARNING GOALS

The “Territorial planning and data analysis” workshop is an integrated course that aims to provide students with analytical, interpretative, and design tools for land-use planning supported by GIS tools.
In particular, the “Land Use Planning” module aims to provide theoretical, methodological, and operational tools for the implementation of land use planning interventions through a design exercise to be carried out during the semester.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

In the Territorial Planning and Data Analysis Laboratory, students will acquire tools and knowledge to address complex urban and territorial planning issues.
In particular, the module aims to provide the following learning outcomes related to:
1. acquisition of theoretical knowledge and understanding of planning contexts;
2. assimilation of the concepts, theories and models of territorial planning presented and discussed;
3. understanding the technical language and methodologies used to analyse and develop planning tools (plans, programmes, etc.).
4. identification of the relationships between concepts, the evolution of tools and prospects for territorial and landscape design.
5. selection and evaluation of sources, recognising their strengths and weaknesses in order to formulate intervention strategies in valuable existing cities.

**Applying knowledge and understanding**

The workshop aims to develop the ability to apply acquired knowledge in new situations and, above all, in practical planning contexts by developing case studies and intervention scenarios. The module will focus on the specific skills needed to adapt theoretical models to concrete problems, applying the methodologies learnt through the analysis and comparison of case studies, using the knowledge and skills acquired to address and solve complex real-world problems, and formulating hypotheses and options to identify the most appropriate solution.
An important aspect of this is the ability to think critically and question assumptions in order to propose innovative solutions. Where possible, it involves developing personal skills in favour of the territorial project, formulating new questions and contributing to the advancement of practices for enhancing existing methods.

## COURSE CONTENT/SYLLABUS

The Territorial Planning course covers a wide range of topics through lectures and fieldwork, focusing on how to plan natural and built environments in a sustainable and responsible manner. The fundamental concepts discussed during the lectures will include:
- definitions and tools;
- organisation and management of land use at different scales, from the local to the regional and national levels;
- protection of cultural heritage and development of policies and strategies;
- challenges of sustainable development, economic sustainability, social equity and conflict;
- protection, management and enhancement of landscapes, both natural and cultural;
- conservation of natural resources;
- conservation of cultural heritage;
- improvement of environmental quality and living conditions.

Classroom activities will be interconnected and based on:
- Lectures to provide the theoretical background and basic knowledge
- Case studies to analyse real examples of land use planning and landscape projects
- Analysis of planning policies and tools to evaluate existing planning policies and regulations
- Deliverables for presenting the groups' analyses and project proposals

## READINGS/BIBLIOGRAPHY

To encourage active participation in the course and establish direct contact with students, teaching materials will be presented and discussed in class before being distributed in person. They will not be uploaded to Teams.

## TEACHING METHODS OF THE COURSE (OR MODULE)

As part of the semester's work, the Territorial Planning course will alternate between lectures and practical work.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [ ] Written
- [x] Oral
- [x] Project discussion
- [ ] Other

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers
- [ ] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

The final grade for the planning module will be weighted with the grade for the integrated teaching module.
Specifically, the assessment of this module will take into account the results and skills demonstrated during the semester and the final discussion, considering:ssion:
- Active participation in lessons (individual): 30%
- Quality of Contribution the group work in accordance with deadlines (individual): 60%
- Final oral interview on what has been learnt from lessons and literature: (only) 10%.

# COURSE DESCRIPTION
# TERRITORIAL PLANNING

# SSD: TECNICA E PIANIFICAZIONE URBANISTICA (ICAR/20)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5520 - LABORATORIO DI PIANIFICAZIONE TERRITORIALE E DATA ANALYSIS
MODULE: 00174 - PIANIFICAZIONE TERRITORIALE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 6

### REQUIRED PRELIMINARY COURSES

Fundamentals of urban planning, Calculus and geometr.

### PREREQUISITES

None.

### LEARNING GOALS

The Terriotorial Planning and Data Analysis Laboratory is an integrated course that aims to provide students with analytical, interpretative, and design tools for spatial planning supported by GIS tools.
The Territorial Planning module provides knowledge of the tools of territorial and urban planning in their thematic, contextual, and operational forms in relation to contemporary planning issues.
The module involves conducting a highly practical exercise for the implementation of an urban and territorial planning tool which, at the appropriate scale, can be used to create an implementation

tool that processes territorial data analysis within an urban regeneration process.
The goal of the data analysis module is to provide knowledge of the basic methods and tools for data design and analysis, and for the management and analysis of large-scale geographic data. Particular emphasis is placed on management processes, acquisition from diverse institutional sources, data reconciliation and normalization in a relational database, data querying using queries created in the Standard Query Language, acquisition and conversion of vector and raster spatial data into a single coordinate system, the use of thematic classification methods for the creation of thematic maps, and the use of geoprocessing operators in spatial analysis processes. By the end of the course, students will have acquired the fundamental knowledge and skills necessary for managing and analyzing data organized in relational databases and the processes required for GIS design and the development of spatial analysis processes. They will also develop problem-solving skills using advanced GIS tools as decision- making support tools.
Students will complete laboratory activities that will enable them to acquire the skills and abilities to perform data analysis using GIS tools and techniques to support the study of urban and territorial planning issues.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

In the Territorial Planning and Data Analysis Laboratory, students will acquire the tools and knowledge necessary to address urban and territorial planning issues.
In Territorial Planning module, tudents will learn urban and regional planning tools and experiences, including through readings and group discussions, examining exemplary case studies in depth. Students will deepen methodological aspects of urban and regional planning and they will understand the relationship with contemporary issues and other disciplines involved in the development of plans, programmes and policies.
In Data Analysis module, students will acquire basic knowledge, data analysis techniques, and tools, along with the use of GIS to support decision-making issues in urban and territorial analysis.

**Applying knowledge and understanding**

The Territorial Planning and Data Analysis Laboratory aims to develop the ability to apply acquired knowledge in new situations and, above all, in practical planning contexts by developing case studies and intervention scenarios.
In Territorial planning module, students will apply the acquired knowledge in conducting a territorial planning activity, which requires the ability to methodologically develop the learnt analytical and operational tools, putting them into the contemporary urban and territorial issues and goals.
In Data Analysis module, students will be able to design relational databases, integrate heterogeneous and massive data from various sources, perform data queries, build geographic databases, and use GIS applications as decision-making support tools.

## COURSE CONTENT/SYLLABUS

This module covers content that, when combined with the Data Analysis module, enables students to understand the main urban and territorial planning tools and their evolution, as well as the most significant issues facing contemporary planning.
During the course, students will actively participate in public presentations of intermediate and final exercises, involving the development of an urban regeneration process through an implementation tool.
The final exam covers both integrated modules.
Specifically, the course content will accompany the training by integrating the workshop dimen sion of the course and will cover the following topics:
- Territorial governance: concepts, tools and guidelines
- The implementation dimension of urban territorial planning: tools and examples
- Complex programmes: tools and examples
- Territorial governance as an interscalar issue: plans for the environment and landscape.
- Strategic planning

## READINGS/BIBLIOGRAPHY

A selection of texts to be studied will be indicated by the professor, to be supplemented with teaching materials (book excerpts, articles) that will be provided during the course.

## TEACHING METHODS OF THE COURSE (OR MODULE)

Lectures and workshop.

## 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**

# COURSE DESCRIPTION
# TERRITORIAL PLANNING

# SSD: TECNICA E PIANIFICAZIONE URBANISTICA (ICAR/20)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: GERUNDO CARLO
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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5520 - LABORATORIO DI PIANIFICAZIONE TERRITORIALE E DATA ANALYSIS
MODULE: 00174 - PIANIFICAZIONE TERRITORIALE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 03 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 6

### REQUIRED PRELIMINARY COURSES

Corso integrato di istituzioni di Matematiche.

### PREREQUISITES

No prerequisites are required.

### LEARNING GOALS

The Planning and Data Analysis Laboratory is an integrated, workshop-based course aimed at providing students with analytical and interpretative tools for spatial planning. The course involves conducting a highly application-oriented experience focused on the use of models and methods for territorial data analysis and their processing for the implementation of land use and regional plans. The urban and regional planning lectures focus on reconstructing a conceptual framework to identify the most appropriate planning tools at different scales and the various territorial governance bodies. In detail, the course is designed to promote the understanding of major urban

and territorial phenomena through applied knowledge of the principal techniques for analysis at both the urban and regional scale, as well as the main tools of spatial planning and territorial governance.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

Students acquire a foundational knowledge of theories and tools related to urban and regional planning, and understand the interrelations with other disciplines involved in the preparation of plans, policies, programs, and urban projects through activities such as reading, discussion, and the study of selected, representative case studies.

**Applying knowledge and understanding**

Students develop skills in documentation and communication, using appropriate technical terminology, to read and understand land use and regional plans. Thanks to these critical competences, students are able to identify the components, elements, structure, and relational systems that constitute the territory and the city, thus guiding planning activities.

## COURSE CONTENT/SYLLABUS

The course includes lectures, critical readings, exercises, seminars, and discussions aimed at deepening knowledge of the theories and models of urban and regional planning.

- **Part I.** Understanding major urban and territorial phenomena; evolution of cities and territories; current challenges.
- Cities and Territories: definitions and interpretative models
- Sustainability, health, environment, and landscape
- Natural hazards, climate change adaptation, land consumption
- Demographic and housing pressures and their urban/territorial implications
- **Part II.** Main techniques for urban and territorial analysis and innovative tools for their application
- Concept of resource and analysis of essential resources
- Urban space and society (demography, aging, immigration, land use)
- Urban economy (traditional sectors, globalization, innovative processes)
- Urban activities and mobility
- **Part III.** Knowledge of territorial governance processes and planning instruments; multiscalar governance: from hierarchical to collaborative planning
- Regional-scale planning tools
- Urban-scale planning
- Plan implementation –Detailed plans, equalization, and compensation mechanisms
- **Part IV.** Techniques supporting the development of urban and regional plans
- Participation, consultation, negotiated planning
- Strategic planning
- Scenario building and decision-making

## READINGS/BIBLIOGRAPHY

Reference texts include:

•Gaeta L., Janin Rivolin U., Mazza L. (2021), *Governo del territorio e pianificazione spaziale*, Città Studi Edizioni, Torino.

•Petroncelli E., Stanganelli M., Cataldo A. (2011), *Assetto del territorio. Dalle norme al processo di piano*, Liguori, Napoli.

The lecturer will indicate a selection of chapters to study during the course, supplemented with additional didactic material (book excerpts, articles).

## TEACHING METHODS OF THE COURSE (OR MODULE)

Lectures are complemented by guided exercises applying the acquired notions. The course combines theoretical lessons, case studies, and practical exercises using spreadsheets and GIS software.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [x] Written
- [ ] Oral
- [ ] Project discussion
- [x] Other : Discussion of the exercises carried out during the course

**In case of a written exam, questions refer to**

- [x] Multiple choice answers
- [x] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

Assignments and intermediate submissions are scheduled to monitor the correct acquisition of the programme contents.

# COURSE DESCRIPTION
# DATA ANALYSIS

# SSD: INFORMATICA (INF/01)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: DI MARTINO FERDINANDO
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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5520 - LABORATORIO DI PIANIFICAZIONE TERRITORIALE E DATA ANALYSIS
MODULE: U5521 - DATA ANALYSIS
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 4

### REQUIRED PRELIMINARY COURSES

Fundamentals of urban planning, Calculus and geometry.

### PREREQUISITES

None.

### LEARNING GOALS

The Spatial Planning and Data Analysis Laboratory is an integrated course that aims to provide students with analytical, interpretative, and design tools for spatial planning supported by GIS tools.
Specifically, the goal of the data analysis module is to provide knowledge of the basic methods and tools for data design and analysis, and for the management and analysis of large-scale geographic data. Particular emphasis is placed on management processes, acquisition from diverse institutional sources, data reconciliation and normalization in a relational database, data

querying using queries created in the Standard Query Language, acquisition and conversion of vector and raster spatial data into a single coordinate system, the use of thematic classification methods for the creation of thematic maps, and the use of geoprocessing operators in spatial analysis processes. By the end of the course, students will have acquired the fundamental knowledge and skills necessary for managing and analyzing data organized in relational databases and the processes required for GIS design and the development of spatial analysis processes. They will also develop problem-solving skills using advanced GIS tools as decision-making support tools.
Students will complete laboratory activities that will enable them to acquire the skills and abilities to perform data analysis using GIS tools and techniques to support the study of urban and territorial planning issues.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

In the Territorial Planning and Data Analysis Laboratory, students will acquire the tools and knowledge necessary to address urban and territorial planning issues.
Specifically, in the Data Analysis module, students will acquire basic knowledge, data analysis techniques, and tools, along with the use of GIS to support decision-making issues in urban and territorial analysis.

**Applying knowledge and understanding**

The Lab aims to develop the ability to apply acquired knowledge in new situations and, above all, in practical planning contexts by developing case studies and intervention scenarios.
Specifically, in the Data Analysis module, students will be able to design relational databases, integrate heterogeneous and massive data from various sources, perform data queries, build geographic databases, and use GIS applications as decision-making support tools.

## COURSE CONTENT/SYLLABUS

The module presents contents that, together with those of the Territorial Planning module, with which it is integrated, allow students to acquire the knowledge and data analysis tools to support urban and territorial planning.
The module teachings refer to relational databases for data analysis and the use of GIS as a decision support tool.  Below is the program of the course which shows the topic of each lesson and its description.
Topic: Databases: needs and characteristics. Relational databases Description: the needs for using relational databases are highlighted with typical examples; in particular, the problems arising from the improper use and management of data such as inconsistencies and duplications are analyzed.
Topic: Databases: needs and characteristics. Relational databases Description: the basic concepts of relational data theory are introduced starting from the set concept of relation.

Topic: The relational data model and the operators of relational algebra. Description: the concept of table as a set relationship and the concept of primary key necessary to uniquely determine the instances is introduced.
Topic: The relational data model and the operators of relational algebra. Description: the concept of foreign key is introduced and one-to-one and one-to-many associations (relationships) are discussed
Topic: The relational data model and the operators of relational algebra. Description: many-to-many relationships are dealt with in their breakdown into two one-to-many relationships. Creating a database in MS Access is simulated.
Topic: Creating a database in MS Access. Creating tables and relationships between tables. Referential integrity constraints. Description: using the RDMS Access tool, the tables and the relationships between them are created and the referential integrity constraints are applied.
Topic: Designing a Relational Database in MS ACCESS. Creation of the ISTAT census data database of the municipality of Naples. Description: the reconciliation activities of data starting from inhomogeneous sources and their acquisition in relational database tables are explored. An experiment is carried out starting from the ISTAT census data of the population and building of the municipality of Naples.
Topic: Designing a Relational Database in MS ACCESS. Creation of the ISTAT census data database of the municipality of Naples. Description: the creation of the database of the ISTAT census areas is carried out in MS Access with the composition of the relationships between the tables and the acquisition as instances of the reconciled data.
Topic: Querying and Analyzing Data in a Relational Database The Standard Query Language and Query Query Creation. Description: The Standard Query Language is introduced. The main data query commands are analyzed.
Topic: Querying and Analyzing Data in a Relational Database The Standard Query Language and Query Query Creation. Description: By using the MS Access Query Builder different query query types are constructed.
Topic: Querying and Analyzing Data in a Relational Database Creation of query queries and analysis of ISTAT census data of the municipality of Naples. Description: the different types of query queries are prepared for the ISTAT census analysis
Topic: Spatial data - vector and raster data - geographic coordinates. Description: The concept of spatial data and geo-reference is introduced. Atomic vector spatial data types (point, polyline and polygon), raster data types (satellite images, digital orthophotos, data modeled on surfaces by spatial interpolation processes) are specified, and how they are implemented is analyzed.
Topic: Spatial data - vector and raster data - geographic coordinates. Description: The main geographic coordinate systems are covered: UTM WGS84 - ETR 89, Gauss Boaga, UTM ED50, Cassini-Soldner. In addition, the methods of conversion between coordinate systems and georeferencing of non-georeferenced vector and raster data are explored.
Topic: Data management and spatial selections in GIS. Description: The implementations of vector and raster spatial data types in GIS and their acquisition mode in legend and map display are analyzed.

Topic: Data management and spatial selections in GIS. Description: It deals with the use of tables and the creation of fields connected to the features of vectorial themes. The methods of selection of features are analyzed through the use of queries on the fields.
Topic: Data management and spatial selections in GIS. Description: It deals with the use of tables and the creation of fields connected to the features of vectorial themes. The methods for selecting features are analyzed by creating queries on fields (selection by means of attributes).
Topic: Data management and spatial selections in GIS. Description: It deals with the use of tables and the creation of fields connected to the features of vectorial themes. The methods of selecting features are analyzed by creating queries on the fields. The creation and use of joins and relates between tables to associate external tables with features of a vector thematism are discussed. Furthermore, the Summarize function is analyzed and tested, which allows to obtain statistical data of synthesis of fields grouped by unique values of a field.
Topic: Data management and spatial selections in GIS. Description: The types of spatial selection are discussed by applying the use of spatial operators (Intersect, completely contain, within, etc.). Numerous examples of spatial selection in GIS are analyzed.
Topic: Data management and spatial selections in GIS. Description: The concept of thematic classification is introduced and its use for the creation of thematic maps. Thematic classification methods for unique values of fields are analyzed.
Topic: Thematic classification methods. Description: Thematic classification methods of manual, equal interval and quantile type are analyzed, highlighting for which needs and problems their use is necessary and appropriate.
Topic: Thematic classification methods. Description: The thematic classification methods natural reaks and standard deviation are analyzed, highlighting the importance of their use for the study of the spatial distribution of characteristics and phenomena related to the classified themes
Topic: The Geoprocessing Operators. Description: The main geoprocessing operators Dissolve, merge, union, clip and intersect are introduced and examples of the use of geoprocessing operators in the solution of spatial analysis problems are discussed.
Topic: The Geoprocessing Operators. Description: The geoprocessing buffer operator is discussed and the different types of buffer analysis are analyzed with examples for the determination of risk or constraint areas and the analysis of entities subject to the presence of such risks or constraints.
Topic: Creation of a GIS of the municipality of Naples and creation of thematic maps. Description: The creation of a GIS of the municipality of Naples including basic topographical data, districts and census areas is experimented and thematic maps are created linked to census information on the population, families, foreigners, buildings and on accommodation.
Topic: Creation of a GIS of the municipality of Naples: experimentation of spatial analysis processes for urban analysis. Description: Spatial analysis processes applied to the GIS of the municipality of Naples are tested for the analysis of specific urban analysis problems.

## READINGS/BIBLIOGRAPHY

Slides provided in class related to relational databases

F. Di Martino, M. Giordano, S. Sessa, RDBMS Relational Database and Architectures, Aracne Editrice, pages 152, 2006, ISBN: 88-548-0583-1
P. Atzeni, Databases. Models and query languages, Milan, McGraw Hill Companies, pages 766, 2009, ISBN: 88-386-9445-1
Slides provided to the students related to GIS systems
F. Di Martino, M. Giordano, Geographic Information Systems - Theory and Methods, Aracne Editrice, pages 440, 2005, ISBN: 88-548-0172-0
Seravalli, GIS. Theories and applications, Milan, La Mandragora Editrice, pages 224, 2011, ISBN: 8875863261

## TEACHING METHODS OF THE COURSE (OR MODULE)

The instructor will use:
a) Lectures for approximately 50% of the total hours;
b) Practical exercises to explore theoretical aspects for 50% of the total hours.
Equipment used: recorded lectures, multimedia supports, specialized software, online materials.

## 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**

There are no midterm exams.
During exam sessions, students will present, in groups or individually, project projects developed during laboratory activities and discuss topics covered in class.

# COURSE DESCRIPTION
# DATA ANALYSIS

# SSD: INFORMATICA (INF/01)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: CARDONE BARBARA
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EMAIL: b.cardone@unina.it

## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5520 - LABORATORIO DI PIANIFICAZIONE TERRITORIALE E DATA ANALYSIS
MODULE: U5521 - DATA ANALYSIS
TEACHING LANGUAGE: ITALIANO
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 4

### REQUIRED PRELIMINARY COURSES

Fundamentals of urban planning, Calculus and geometry.

### PREREQUISITES

None

### LEARNING GOALS

The Spatial Planning and Data Analysis Laboratory is an integrated course that aims to provide students with analytical, interpretative, and design tools for spatial planning supported by GIS tools.
Specifically, the goal of the data analysis module is to provide knowledge of the basic methods and tools for data design and analysis, and for the management and analysis of large-scale geographic data. Particular emphasis is placed on management processes, acquisition from iverse institutional sources, data reconciliation and normalization in a relational database,

data querying using queries created in the Standard Query Language, acquisition and conversion of
vector and raster spatial data into a single coordinate system, the use of thematic classification methods for the creation of thematic maps, and the use of geoprocessing operators in spatial analysis processes. By the end of the course, students will have acquired the fundamental knowledge and skills necessary for managing and analyzing data organized in relational databases and the processes required for GIS design and the development of spatial analysis processes. They will also develop problem-solving skills using advanced GIS tools as decision making support tools. Students will complete laboratory activities that will enable them to acquire the skills and abilities to perform data analysis using GIS tools and techniques to support the study of urban and territorial planning issues.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

In the Territorial Planning and Data Analysis Laboratory, students will acquire the tools and knowledge necessary to address urban and territorial planning issues. Specifically, in the Data Analysis module, students will acquire basic knowledge, data analysis techniques, and tools, along with the use of GIS to support decision-making issues in urban and territorial analysis.

**Applying knowledge and understanding**

The Lab aims to develop the ability to apply acquired knowledge in new situations and, above all, in practical planning contexts by developing case studies and intervention scenarios. Specifically, in the Data Analysis module, students will be able to design relational databases, integrate heterogeneous and massive data from various sources, perform data queries, build geographic databases, and use GIS applications as decision-making support tools.

## COURSE CONTENT/SYLLABUS

The module presents contents that, together with those of the Territorial Planning module, with which it is integrated, allow students to acquire the knowledge and data analysis tools to support urban and territorial planning.
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Topic: Creation of a GIS of the municipality of Naples: experimentation of spatial analysis processes for urban analysis. Description: Spatial analysis processes applied to the GIS of the municipality of Naples are tested for the analysis of specific urban analysis problems.

## READINGS/BIBLIOGRAPHY

Slides provided in class related to relational databases
F. Di Martino, M. Giordano, S. Sessa, RDBMS Relational Database and Architectures, Aracne Editrice, pages 152, 2006, ISBN: 88-548-0583-1
P. Atzeni, Databases. Models and query languages, Milan, McGraw Hill Companies, pages 766, 2009, ISBN: 88-386-9445-1

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Seravalli, GIS. Theories and applications, Milan, La Mandragora Editrice, pages 224, 2011, ISBN: 8875863261

## TEACHING METHODS OF THE COURSE (OR MODULE)

The instructor will use:
a) Lectures for approximately 50% of the total hours;
b) Practical exercises to explore theoretical aspects for 50% of the total hours.
Equipment used: recorded lectures, multimedia supports, specialized software, online materials.

## 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**

There are no midterm exams.
During exam sessions, students will present, in groups or individually, project projects developed during laboratory activities and discuss topics covered in class.

# COURSE DESCRIPTION
# TECHNIQUE OF CONSTRUCTIONS

# SSD: TECNICA DELLE COSTRUZIONI (ICAR/09)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: CHIOCCARELLI EUGENIO
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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 6

### REQUIRED PRELIMINARY COURSES

Scienza delle Costruzioni

### PREREQUISITES

None

### LEARNING GOALS

The course aims to provide students with basic knowledge and practical tools for the verification and design of structural elements

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

Knowledge of the objectives of structural design and of the issues related to structural conception and analysis.

**Applying knowledge and understanding**

Ability to communicate and to apply the acquired theoretical knowledge.

## COURSE CONTENT/SYLLABUS

Design approach and verification methods of structural systems. The geometric model, the mechanical and the load model. Measurement methods of structural safety: random variables, characteristic values of material strength and loads. The semi-probabilistic limit state method. Actions on structures and load combinations. Steel structures: structural types, material properties and constitutive models; resistance verification for tensile, bending and shear forces; stability of compressed members; notes on stability of members under bending; connections and joints; displacement verification at service limit state. Reinforced concrete structures: structural types, materials properties and constitutive models; verification of axial strength; verification of flexural strength with and without axial forces; shear strength mechanisms.

## READINGS/BIBLIOGRAPHY

- Mezzina M., Fondamenti di Tecnica delle costruzioni, CittàStudi edizioni, 2025
- Cosenza, E., Manfredi, G., Pecce, M. Strutture in Cemento Armato, Hoepli, 2019
- Ballio, G., Mazzolani F., Bernuzzi, C., Landolfo, R. Strutture di acciaio. Teoria e progetto. Hoepli, 2020
- Course notes

## TEACHING METHODS OF THE COURSE (OR MODULE)

Frontal lectures and practical exercises

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [ ] Written
- [x] Oral
- [x] Project discussion
- [ ] Other

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers
- [ ] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

# COURSE DESCRIPTION
# TECHNIQUE OF CONSTRUCTIONS

# SSD: TECNICA DELLE COSTRUZIONI (ICAR/09)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: FIORINO LUIGI
PHONE: 081-2538851 - 081-7682436
EMAIL: luigi.fiorino@unina.it

## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 6

### REQUIRED PRELIMINARY COURSES

Teoria delle strutture

### PREREQUISITES

None

### LEARNING GOALS

The course aims at providing students of operative tools for verification and design of structural elements

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The student needs to show ability to know and understand problems related to conceptual design and verification of structures. The student will also understand the relationships with the other disciplines that contribute to the development of the project

**Applying knowledge and understanding**

The student will develop the ability to apply theoretical and methodological knowledge related to the structural aspects of the architectural project

## COURSE CONTENT/SYLLABUS

Design approach and verification methods of structural systems. The geometric model, the mechanical and the load model. Measurement methods of structural safety: random variables, characteristic values of material strength and loads. The semi-probabilistic limit state method. Actions on structures and load combinations. Steel structures: structural types, material properties and constitutive models; resistance verification for tensile, bending and shear forces; stability of compressed members; notes on stability of members under bending; connections and joints; displacement verification at service limit state. Reinforced concrete structures: structural types, materials properties and constitutive models; verification of axial strength; verification of flexural strength with and without axial forces; shear strength mechanisms.

## READINGS/BIBLIOGRAPHY

- Bernuzzi, C. Proporzionamento di strutture di acciaio. Hoepli, 2018
- Ballio, G., Mazzolani F., Bernuzzi, C., Landolfo, R. Strutture di acciaio. Teoria e progetto. Hoepli, 2020
- Cosenza, E., Manfredi, G., Pecce, M. Strutture in Cemento Armato, Hoepli, 2019

## TEACHING METHODS OF THE COURSE (OR MODULE)

Face-to-face lectures and exercises

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [ ] Written
- [x] Oral
- [x] Project discussion
- [ ] Other

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers
- [ ] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

# COURSE DESCRIPTION
# PRINCIPLES OF ARCHITECTURAL CONSERVATION

# SSD: RESTAURO (ICAR/19)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: POLLONE STEFANIA
PHONE: 081-2538023
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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 6

### REQUIRED PRELIMINARY COURSES

None

### PREREQUISITES

None

### LEARNING GOALS

The course aims to provide students with critical, methodological, and technical knowledge necessary to understand and recognize the specificities of built cultural heritage, with a focus on its protection, restoration, and enhancement. Starting from the relationship between past architects and existing structures, the course examines the origins of modern restoration and its codifications in the 19th and 20th centuries, leading up to current trends in restoration. This will be achieved through an in-depth exploration of the fundamental critical issues within the discipline. Additionally, the course addresses aspects related to the understanding of materials and traditional construction techniques in historic architecture, the diagnosis of structural failures, and

the identification of recurring phenomena of alteration and degradation as well as the factors contributing to the vulnerability of historic built heritage. Particular attention will be paid to the relationships with the framework of current protective regulations. At the end of the course and after passing the exam, the student will be able to understand the evolution of architectural and urban restoration theories and practices in relation to contemporary disciplinary debates, to recognize the material and construction-specific features of historic construction sites, and to apply these skills to the interpretation of historical heritage in its processual nature, with a view to its transmission to future generations.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The student is expected to:

- demonstrate knowledge and the ability to interpret the historical contexts and key figures that have shaped the evolution of architectural and urban restoration theories and practices, from classical antiquity to the contemporary disciplinary debate;
- demonstrate an understanding of the major projects and interventions that illustrate the development of architectural and urban restoration theories and practices over the centuries;
- demonstrate to be able to take part in complex discussions dealing with the processes that have led to the progressive recognition of the values of built heritage over time;
- demonstrate a critical understanding of contemporary trends in the disciplinary debate on restoration;
- demonstrate knowledge of the specificities of historic construction sites, with particular attention to material and construction techniques;
- demonstrate the ability to identify the factors of vulnerability, damage, and degradation affecting historic built heritage.

The course aims to provide foundational knowledge, methodological approaches, and technical tools essential for analyzing and understanding the evolution of architectural and urban restoration theories and practices in the context of contemporary disciplinary debates. Students will also learn to critically interpret the material and construction characteristics of historic built heritage, including its main vulnerabilities and forms of damage. Supported by examples and in-depth studies of specific cases from both past centuries and the present, these tools will enable students to grasp the unique qualities of each stratified building in its processual nature. They will learn to view such buildings as a synthesis of historical sedimentation, reflecting transformative and conservative interventions that were carried out with varying degrees of awareness regarding the cultural values they embody. This perspective will also consider the evolving sensitivity toward built heritage over time.

**Applying knowledge and understanding**

The student must demonstrate:

**Independent Judgment**

Students must demonstrate the ability to critically analyze the evolution of architectural and urban restoration theories and practices, showing a solid understanding of historical chronology. They

should engage with current trends and develop a personal critical perspective that aligns with the scientifically accepted methodological framework of the Restoration discipline. Additionally, students must be able to recognize the distinctive features of historic construction sites and identify signs of damage affecting historic built heritage. This independent judgment will be progressively refined and assessed through classroom activities, site visits, and the final exam.

**Communication Skills**
Students should be able to present and discuss the evolution of architectural and urban restoration theories and practices, as well as the specific characteristics of historic construction sites. They must demonstrate a strong grasp of chronology and relevant terminology, relating their knowledge to historical and geographical contexts, and to broader cultural history. Clear communication is essential, particularly in connecting acquired knowledge to contemporary issues in restoration and conservation.

**Learning Ability**
Students must develop the skills necessary to expand their knowledge through diverse bibliographic sources and participation in seminars, conferences, and workshops, including international events offered by the Department or externally. Upon completion of the programme, the student should be able to apply their knowledge effectively and critically to the subsequent laboratory-based studio in the field of Architectural Conservation, as set out in the curriculum for the second semester of the third year (Atelier 3, module “Progetto di restauro e valorizzazione del patrimonio architettonico”).

## COURSE CONTENT/SYLLABUS

**Articulation:**

**I. CONTEMPORARY ISSUES IN THE CONSERVATION OF ARCHITECTURAL HERITAGE AND LANDSCAPE**

- The term "restoration" in its various forms.
- The concept of "monument" as a "document” and the protection of cultural heritage.
- Architectural restoration, urban restoration and landscape restoration.
- Methodological considerations in restoration activities: compatibility, reversibility, distinction, and minimal intervention.
- Architectural restoration and new design: recent experiences in Italy and Europe.

**II. HISTORICAL EVOLUTION AND THEORETICAL CONTRIBUTIONS TO RESTORATION**

- The history of architecture and restoration.
- Interventions on existing architecture before the 19th century: "restoration" between Antiquity and Renaissance.
- Interventions on existing architecture before the 19th century: restoration issues during the Baroque period.
- The birth of "restoration" in the modern sense: archaeological restoration issues in Paestum, the Vesuvian area and Rome between the 18th and the 19th centuries.

- The development of the "stylistic restoration" and, the contribution of French intellectuals. Eugéne-Emmanuel Viollet-le-Duc: writings and restoration yards.
- The English restoration movement: John Ruskin, William Morris, and the Society for Protection of Ancient Buildings (SPAB).
- Restoration and architectural debate in Italy in the mid-19th century: Camillo Boito and the dialectic between conservation and restoration.
- The protagonists of the "historical restoration" in Italy.
- Gustavo Giovannoni: principles and thoughts on architectural restoration. The "Athens Charter" of 1931 and the "Carta italiana del restauro" of 1932.
- Restoration works in Naples between the two World Wars: the contribution of Gino Chierici.
- Destructions and reconstructions in Italy and Europe after the World War II: the debate between conservation and innovation.
- The "critical restoration" in the contribution by Roberto Pane. The "Venice Charter" of 1964.
- Restoration and "value judgment": the considerations of Cesare Brandi.

**III. HISTORICAL ARCHITECTURE AND BUILDING TECHNIQUES. KNOWLEDGE AND APPROACH TO STRENGTHENING DESIGN**
- Constructive methods and phenomenology of damage.
- Overview of diagnostic and monitoring project. The diagnosis of masonry instability.
- The role of structural strengthening in the restoration project.
- Soil and the foundation structures in built heritage: materials, construction types and foundational subsidence.
- Vertical masonries: materials and constructive types with a focus on the Campania context. Mortars in old buildings.
- Architectural surfaces: plasters, stuccos and painting. Materials, construction techniques and decay phenomena. The UNI-Nor.Ma.L 1/88 (2006 update) Recommendations
- Masonry arches and vaults: materials, constructive types and issues of instability.
- Wooden ceilings and roofs: main deterioration and instability problems.

**IV. THE PROTECTION OF THE CULTURAL HERITAGE**
- Restoration, recovery, protection and "integrated conservation". Theoretical and methodological evolution through the Restoration Charters.
- The European Charter of Architectural Heritage (1975) and the Amsterdam Declaration (1975).
- The meaning of "landscape" and the European Landscape Convention (2000).
- The development of protection guidelines in recent decades. The Cultural Heritage and Landscape Code" (D.L. 42/2004).

## READINGS/BIBLIOGRAPHY

**References:**

**I. CONTEMPORARY ISSUES IN CONSERVATION OF ARCHITECTURAL HERITAGE AND LANDSCAPE**

- J. Jokilehto, *A History of Architectural Conservation*, Butterworth-Heinemann, Oxford 1999, pp. 295-318 ("Area Architettura" Library) (recommended).
- G. Carbonara, *An Italian contribution to architectural restoration*, in «Frontiers of Architectural Research», 2012, pp. 2-9 (recommended).

**II. HISTORICAL EVOLUTION AND THEORETICAL CONTRIBUTIONS TO RESTORATION**

- J. Jokilehto, *A History of Architectural Conservation*, Butterworth-Heinemann, Oxford 1999, pp. 1-40; 42 -50; 56-88; 101; 127-132; 137-157; 174-181; 184-191; 200-206; 215-237; 283-292 ("Area Architettura" Library) (recommended).
- V. Russo, *Architecture and Memory of Ancient Times: Renewal, Re-Use, Restoration in Seventeenth Century Neapolitan Churches*, in A. Roca de Amicis and C. Varagnoli (eds.), Alla moderna*. Old Churches and Baroque Renovations: a European Perspective*, Artemide, Roma 2015, pp. 69-93 ("Roberto Pane" Library) (optional).
- S. Pollone, *Materials tested by time. Quality and durability of the restorations of the temples of Paestum from the nineteenth-century approaches to the contemporary issues of conservation,* in Proceedings of the 4th WTA International PhD Symposium (Delft, 13-16 settembre 2017), R. Van Hees, W. Quist, S. Granneman (eds.), WTA Nederland-Vlaanderen, Delft-Heverlee 2017, pp. 107-114 (academia.edu) (optional).
- C. Brandi, *Theory of Restoration* (trad. Cynthia Rockwell; rev. Dorothy Bell; cur. Giuseppe Basile), Nardini, Firenze 2005 (optional). •see also: M. Glendinning, T*he conservation movement. A history of architectural preservation: antiquity to modernity*, Routledge, London-New York 2013 (https://books.google.it) (optional).

**III. HISTORICAL ARCHITECTURE AND BUILDING TECHNIQUES. KNOWLEDGE AND APPROACH TO THE STRENGTHENING DESIGN**

- B. Feilden, *Conservation of Historic Buildings*, Routledge, London 2023 ("Area Architettura" Library) (recommended).
- D. Fiorani, *Seismic issues in historical constructions and sites: the conservation aspects*, in *International Workshop on Seismic Risk. Preparedness and Mitigation of Archeological and Historical Sites*, Jerusalem 2014, pp. 1-4 (www.academia.edu) (optional).
- E. Coisson and F. Ottoni, *Structural monitoring of historical construction: increasing knowledge to minimize interventions*, in L. Toniolo, M. Boriani, G. Guidi (eds.), *Built Heritage: Monitoring Conservation Management*, Springer, London 2015, pp. 83-92 (optional).
- L. Romano, M. Falcone, *Wooden vaults in Naples between survey and construction knowledge: the case of the church of Santa Maria Egiziaca all'Olmo*, in «Timber and construction», Proceedings of the Ninth Conference of the Construction History Society, (Cambridge, 1st-3rd April 2022), edited by J. Campbell *et al*., The Construction History Society, Cambridge 2022, pp. 157-170 (optional).

**IV. THE PROTECTION OF THE CULTURAL HERITAGE**

- J. Ziesemer, M. Petzet, *International charters for conservation and restoration*, ICOMOS 2004, pp. 7-9; 13-15 ("Roberto Pane" Library) (optional).

All documents (Charters and regulations) reported in the program are easily available online.

## TEACHING METHODS OF THE COURSE (OR MODULE)

The course is structured into lectures, seminars, and on-site visits.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [ ] Written
- [x] 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 oral exam evaluates the theoretical knowledge that students have acquired regarding the contemporary debate on the conservation and protection of architectural heritage. This includes insights into the origins of modern restoration and the evolution of the discipline's codifications through the centuries, culminating in twentieth-century formulations. Additionally, the assessment measures the students' skills in understanding the material and construction techniques of historical built heritage, as well as their ability to recognize the main phenomena of decay and instability.

# COURSE DESCRIPTION
# PRINCIPLES OF ARCHITECTURAL CONSERVATION

# SSD: RESTAURO (ICAR/19)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: ROMANO LIA
PHONE: 081-2538022
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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 6

### REQUIRED PRELIMINARY COURSES

None.

### PREREQUISITES

None.

### LEARNING GOALS

The course aims to provide students with critical, methodological, and technical knowledge necessary to understand and recognize the specificities of built cultural heritage, with a focus on its protection, restoration, and enhancement. Starting from the relationship between past architects and existing structures, the course examines the origins of modern restoration and its codifications in the 19th and 20th centuries, leading up to current trends in restoration. This will be achieved through an in-depth exploration of the fundamental critical issues within the discipline. Additionally, the course addresses aspects related to the understanding of materials and traditional construction techniques in historic architecture, the diagnosis of structural failures, and

the identification of recurring phenomena of alteration and degradation as well as the factors contributing to the vulnerability of historic built heritage. Particular attention will be paid to the relationships with the framework of current protective regulations.
At the end of the course and after passing the exam, the student will be able to understand the evolution of architectural and urban restoration theories and practices in relation to contemporary disciplinary debates, to recognize the material and construction-specific features of historic construction sites, and to apply these skills to the interpretation of historical heritage in its processual nature, with a view to its transmission to future generations.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The student is expected to:

- demonstrate knowledge and the ability to interpret the historical contexts and key figures that have shaped the evolution of architectural and urban restoration theories and practices, from classical antiquity to the contemporary disciplinary debate;
- demonstrate an understanding of the major projects and interventions that illustrate the development of architectural and urban restoration theories and practices over the centuries;
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**Applying knowledge and understanding**

The student must demonstrate:

**Independent Judgment**

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scientifically accepted methodological framework of the Restoration discipline. Additionally, students must be able to recognize the distinctive features of historic construction sites and identify signs of damage affecting historic built heritage. This independent judgment will be progressively refined and assessed through classroom activities, site visits, and the final exam.

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## COURSE CONTENT/SYLLABUS

**Articulation:**

**I. CONTEMPORARY ISSUES IN THE CONSERVATION OF ARCHITECTURAL HERITAGE AND LANDSCAPE**

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- The protagonists of the "historical restoration" in Italy.
- Gustavo Giovannoni: principles and thoughts on architectural restoration. The "Athens Charter" of 1931 and the "Carta italiana del restauro" of 1932.
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- The "critical restoration" in the contribution by Roberto Pane. The "Venice Charter" of 1964.
- Restoration and "value judgment" : the considerations of Cesare Brandi.

**III. HISTORICAL ARCHITECTURE AND BUILDING TECHNIQUES. KNOWLEDGE AND APPROACH TO STRENGTHENING DESIGN**

- Constructive methods and phenomenology of damage.
- Overview on the diagnostic and monitoring project . The diagnosis of masonry instability.
- The role of structural strengthening in the restoration project.
- Soil and the foundation structures in built heritage: materials, construction types and foundational subsidence.
- Vertical masonries: materials and constructive types with a focus on the Campania context. Mortars in old buildings.
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- Masonry arches and vaults: materials, constructive types and issues of instability.
- Wooden ceilings and roofs: main deterioration and instability problems.

**IV. THE PROTECTION OF THE CULTURAL HERITAGE**

- Restoration, recovery, protection and "integrated conservation". Theoretical and methodological evolution through the Restoration Charters.
- The European Charter of Architectural Heritage (1975) and the Amsterdam Declaration (1975).
- The meaning of "landscape" and the European Landscape Convention (2000).
- The development of protection guidelines in recent decades. The Cultural Heritage and Landscape Code" (D.L. 42/2004).

## READINGS/BIBLIOGRAPHY

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C. Brandi, *Theory of Restoration* (trad. Cynthia Rockwell; rev. Dorothy Bell; cur. Giuseppe Basile), Nardini, Firenze 2005 (optional).

•see also: M. Glendinning, *The conservation movement. A history of architectural preservation: antiquity to modernity*, Routledge, London-New York 2013 (https://books.google.it) (optional).

**III. HISTORICAL ARCHITECTURE AND BUILDING TECHNIQUES. KNOWLEDGE AND APPROACH TO THE STRENGTHENING DESIGN**

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**IV. THE PROTECTION OF THE CULTURAL HERITAGE**

J. Ziesemer, M. Petzet, *International charters for conservation and restoration*, ICOMOS 2004, pp. 7-9; 13-15 ("Roberto Pane" Library) (optional).

All documents (Charters and regulations) reported in the programme are easily available online.

### TEACHING METHODS OF THE COURSE (OR MODULE)

The course is structured into lectures, seminars, and on-site visits.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [ ] Written
- [x] 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 oral exam evaluates the theoretical knowledge that students have acquired regarding the contemporary debate on the conservation and protection of architectural heritage. This includes insights into the origins of modern restoration and the evolution of the discipline's codifications through the centuries, culminating in twentieth-century formulations. Additionally, the assessment measures the students' skills in understanding the material and construction techniques of historical built heritage, as well as their ability to recognize the main phenomena of decay and instability.

# COURSE DESCRIPTION
# PRINCIPLES OF ENVIRONMENTAL ENERGETICS

# SSD: FISICA TECNICA AMBIENTALE (ING-IND/11)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: MINICHIELLO FRANCESCO
PHONE: 081-2538665 - 081-7682335
EMAIL: francesco.minichiello@unina.it

## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 8

### REQUIRED PRELIMINARY COURSES

Istituzioni di Analisi matematica e Geometria.

### PREREQUISITES

None.

### LEARNING GOALS

Acquisition of knowledge and operational skills that allow the student to identify the thermal and energy aspects related to the design of the building components and the overall building, to illustrate the connected problems with autonomy and language properties and to propose solutions in harmony with the architectural project.

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The student must show to know and understand the energy relationships that exist between the indoor environment, the building envelope, and the outdoor environment, with reference to the different contexts in which the aforementioned relationships can be configured. The student must show familiarity with the main physical parameters describing the conditions of indoor comfort, at the basis of thermo-technical and system design.

**Applying knowledge and understanding**

The student must show to be able to verify and size simple components of the building envelope, with the aim of containing heat loss and controlling solar radiation. Student must also show the ability to evaluate the possible solutions with reference to the thermal and energy behavior of the building-plant system, as well as awareness in applying calculation models, in harmony with the architectural project.

## COURSE CONTENT/SYLLABUS

Topic A. Units of measurement (0.3 CFU): References on the main physical quantities (displacement, speed, acceleration, force, energy, power, pressure, density, temperature, mass and specific volume). Fundamental quantities. Systems of units of measurement. The International System. Multiples and submultiples. Conversions between units of measures. References to linear interpolation. Numerical exercises.

Topic B. Basic concepts and definitions (0.3 CFU): System and environment. Closed, open and isolated system. Thermodynamic equilibrium. Properties, thermodynamic state. Internal and external properties. Total, specific, extensive and intensive parameters. Thermodynamic state, transformations. State postulate. Pure substance, phase, simple compressible system. Equations of state. The ideal gas. Numerical exercises.

Topic C. Calculation of properties (0.4 CFU): Graphic Pressure-Temperature. Saturated steam. Undercooled liquid. Superheated steam. Determination of the phase of a substance. Internal energy and enthalpy. Calculation of properties in cases of ideal gas, incompressible liquid, solid. Specific heat. Thermal capacity. Numerical exercises.

Topic D. Mass and energy balances for closed systems (1 CFU): Thermal and mechanical energy. Balance equation. Mass balance. Energy balance (first law of thermodynamics for closed systems). Numerical exercises.

Topic E. Mass and energy balances for open systems (1.0 CFU): Hypothesis of local equilibrium. One-dimensional motion. Steady regime. The control volume. Mass balance. Mass flow rate. Volumetric flow rate. Energy balance (first law of thermodynamics for open systems). Expansion work. Thermal and mechanical power. Numerical exercises.

Topic F. Notes on the second law of thermodynamics (0.2 CFU): Notes on limits to energy conversion, energy degradation, entropy. The second law of thermodynamics: Clausius statement and Kelvin-Planck statement.

Topic G. Introduction to heat transfer and conduction (1.0 CFU): The mechanisms of heat exchange: conduction, convection and radiation. Heat flow. Fourier's law. Indefinite flat sheet: temperature trend, flow and thermal power, conductance and thermal resistance. Mechanisms in series and in parallel. Numerical exercises.

Topic H. Radiative heat exchange (0.8 CFU): Wave, speed, frequency, period and length of wave. Electromagnetic radiations and frequencies. Total and monochromatic radiative quantities: emissive power, irradiation and radiance. Absorption, reflection and transmission factors (monochromatic and total). Black body. The laws of radiative heat exchange: Planck, StefanBoltzmann, Wien. Total and monochromatic emissivity. Gray body. The geometric configuration factor. Energy balance in the evaluation of radiative heat exchange. Greenhouse effect. Numerical exercises.
Topic I. Heat exchange for combined mechanisms (0.5 CFU): Examples of combined mechanisms. Calculation of the thermal power exchanged for combined mechanisms. Mean unitary conductance (radiative, convective, total). Thermal resistance of air gaps. Overall heat transfer coefficient (stationary unitary thermal transmittance). Notes on the current legal requirements. Numerical exercises.
Topic L. Humid Air (1 CFU): Definitions. thermal-hygrometric properties: dry bulb, wet bulb, adiabatic saturation and dew point temperatures. Specific enthalpy. Specific volume. Specific humidity and relative humidity. Psychrometric chart. Transformations of humid air: heating, simple cooling, cooling with dehumidification. Adiabatic humidification. Adiabatic mixing. Numerical exercises.
Topic M. Thermo-hygrometric verification of building envelopes (1 CFU): The condensation of water vapor in the walls, simplified procedure for the thermal and hygrometric analysis of building envelopes. Corrective actions for a wall that has condensation formation. Thermo-hygrometric verification of roofs. Notes on the ISO 13788 standard. Numerical exercises.
Topic N. Notes on thermal bridges and dynamic thermal parameters of the building envelope (0.5 CFU): Thermal criticalities of the building envelope (thermal bridges) and hints on dynamic behaviour of building envelope opaque components, through the thermal parameters that allow to evaluate the transient heat exchange (so-called dynamic thermal parameters of the walls, to optimize above all the thermal behavior of buildings in summer: surface mass, phase shift, attenuation, dynamic thermal transmittance).

## READINGS/BIBLIOGRAPHY

- Notes, handouts, tables and diagrams made available by the teachers.
- About humid air and thermo-hygrometric verification of building envelopes, the following book (chapters 1 and 3, plus appendixes) will be used: L. Bellia, P. Mazzei, F. Minichiello, D. Palma: Aria umida. Climatizzazione ed involucro edilizio –Ed. Liguori, 2006.

## TEACHING METHODS OF THE COURSE (OR MODULE)

The teaching consists of lectures, including numerical exercises.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [x] Written
- [x] Oral
- [ ] Project discussion

☐ Other

**In case of a written exam, questions refer to**

☐ Multiple choice answers

☐ Open answers

☑ Numerical exercises

**b) Evaluation pattern**

# COURSE DESCRIPTION
# PRINCIPLES OF ENVIRONMENTAL ENERGETICS

# SSD: FISICA TECNICA AMBIENTALE (ING-IND/11)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: MAURO GERARDO MARIA
PHONE: 081-2538894
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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 8

### REQUIRED PRELIMINARY COURSES

Istituzioni di Analisi matematica e Geometria.

### PREREQUISITES

None.

### LEARNING GOALS

Acquisition of knowledge and operational skills that allow the student to identify the thermal and energy aspects related to the design of the building components and the overall building, to illustrate the connected problems with autonomy and language properties and to propose solutions in harmony with the architectural project.

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The student must show to know and understand the energy relationships that exist between the indoor environment, the building envelope, and the outdoor environment, with reference to the different contexts in which the aforementioned relationships can be configured. The student must show familiarity with the main physical parameters describing the conditions of indoor comfort, at the basis of thermo-technical and system design.

**Applying knowledge and understanding**

The student must show to be able to verify and size simple components of the building envelope, with the aim of containing heat loss and controlling solar radiation. Student must also show the ability to evaluate the possible solutions with reference to the thermal and energy behavior of the building-plant system, as well as awareness in applying calculation models, in harmony with the architectural project.

## COURSE CONTENT/SYLLABUS

**Topic A.** Units of measurement (0.3 CFU): References on the main physical quantities (displacement, speed, acceleration, force, energy, power, pressure, density, temperature, mass and specific volume). Fundamental quantities. Systems of units of measurement. The International System. Multiples and submultiples. Conversions between units of measures. References to linear interpolation. Numerical exercises.

**Topic B.** Basic concepts and definitions (0.3 CFU): System and environment. Closed, open and isolated system. Thermodynamic equilibrium. Properties, thermodynamic state. Internal and external properties. Total, specific, extensive and intensive parameters. Thermodynamic state, transformations. State postulate. Pure substance, phase, simple compressible system. Equations of state. The ideal gas. Numerical exercises.

**Topic C.** Calculation of properties (0.4 CFU): Graphic Pressure-Temperature. Saturated steam. Undercooled liquid. Superheated steam. Determination of the phase of a substance. Internal energy and enthalpy. Calculation of properties in cases of ideal gas, incompressible liquid, solid. Specific heat. Thermal capacity. Numerical exercises.

**Topic D**. Mass and energy balances for closed systems (1 CFU): Thermal and mechanical energy. Balance equation. Mass balance. Energy balance (first law of thermodynamics for closed systems). Numerical exercises.

**Topic E.** Mass and energy balances for open systems (1.0 CFU): Hypothesis of local equilibrium. One-dimensional motion. Steady regime. The control volume. Mass balance. Mass flow rate. Volumetric flow rate. Energy balance (first law of thermodynamics for open systems). Expansion work. Thermal and mechanical power. Numerical exercises.

**Topic F.** Notes on the second law of thermodynamics (0.2 CFU): Notes on limits to energy conversion, energy degradation, entropy. The second law of thermodynamics: Clausius statement and Kelvin-Planck statement.

**Topic G.** Introduction to heat transfer and conduction (1.0 CFU): The mechanisms of heat exchange: conduction, convection and radiation. Heat flow. Fourier's law. Indefinite flat sheet: temperature trend, flow and thermal power, conductance and thermal resistance. Mechanisms in series and in parallel. Numerical exercises.

**Topic H.** Radiative heat exchange (0.8 CFU): Wave, speed, frequency, period and length of wave. Electromagnetic radiations and frequencies. Total and monochromatic radiative quantities: emissive power, irradiation and radiance. Absorption, reflection and transmission factors (monochromatic and total). Black body. The laws of radiative heat exchange: Planck, StefanBoltzmann, Wien. Total and monochromatic emissivity. Gray body. The geometric configuration factor. Energy balance in the evaluation of radiative heat exchange. Greenhouse effect. Numerical exercises.
**Topic I.** Heat exchange for combined mechanisms (0.5 CFU): Examples of combined mechanisms. Calculation of the thermal power exchanged for combined mechanisms. Mean unitary conductance (radiative, convective, total). Thermal resistance of air gaps. Overall heat transfer coefficient (stationary unitary thermal transmittance). Notes on the current legal requirements. Numerical exercises.
**Topic L.** Humid Air (1 CFU): Definitions. thermal-hygrometric properties: dry bulb, wet bulb, adiabatic saturation and dew point temperatures. Specific enthalpy. Specific volume. Specific humidity and relative humidity. Psychrometric chart. Transformations of humid air: heating, simple cooling, cooling with dehumidification. Adiabatic humidification. Adiabatic mixing. Numerical exercises.
**Topic M.** Thermo-hygrometric verification of building envelopes (1 CFU): The condensation of water vapor in the walls, simplified procedure for the thermal and hygrometric analysis of building envelopes. Corrective actions for a wall that has condensation formation. Thermo-hygrometric verification of roofs. Notes on the ISO 13788 standard. Numerical exercises.
**Topic N.** Notes on thermal bridges and dynamic thermal parameters of the building envelope (0.5 CFU): Thermal criticalities of the building envelope (thermal bridges) and hints on dynamic behaviour of building envelope opaque components, through the thermal parameters that allow to evaluate the transient heat exchange (so-called dynamic thermal parameters of the walls, to optimize above all the thermal behavior of buildings in summer: surface mass, phase shift, attenuation, dynamic thermal transmittance).

## READINGS/BIBLIOGRAPHY

- Notes, handouts, tables and diagrams made available by the teachers.
- About humid air thermo-hygrometric verification of building envelopes, the following book (chapters 1 and 3, plus appendixes) will be used: L. Bellia, P. Mazzei, F. Minichiello, D. Palma: "Aria umida. Climatizzazione ed involucro edilizio" –Ed. Liguori, 2006.

## TEACHING METHODS OF THE COURSE (OR MODULE)

The teaching consists of lectures, including numerical exercises.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [x] Written
- [x] Oral
- [ ] Project discussion

☐ Other

**In case of a written exam, questions refer to**

☐ Multiple choice answers

☐ Open answers

☑ Numerical exercises

**b) Evaluation pattern**

The test includes exercises to be carried out and oral interview, during which the student is asked to illustrate and verify the skills and knowledge expected, through questions on the topics of the program.

# COURSE DESCRIPTION
# PRINCIPLES OF ENVIRONMENTAL ENERGETICS

# SSD: FISICA TECNICA AMBIENTALE (ING-IND/11)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: ASCIONE FABRIZIO
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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
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

Institutions of Mathematical Analysis and Geometry (Istituzioni di Analisi Matematica e Geometria).

### PREREQUISITES

None.

### LEARNING GOALS

Acquisition of knowledge and operational skills that allow the student to identify the thermal and energy aspects related to the design of the building components and the overall building, to illustrate the connected problems with autonomy and language properties, and to propose solutions in harmony with the architectural project.

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The student must show to know and to understand the energy relationships that exist between the indoor environment, the building envelope, and the outdoor environment, with reference to the different contexts in which the aforementioned relationships can be configured. The student must show familiarity with the main physical parameters describing the conditions of indoor comfort, at the basis of thermo-technical and system design.

**Applying knowledge and understanding**

The student must show to be able to verify and size simple components of the building envelope, with the aim of limiting heat loss and controlling solar radiation. Student must also show the ability to evaluate the possible solutions with reference to the thermal and energy behavior of the building-plant system, as well as capability in applying calculation models, in harmony with the architectural project.

## COURSE CONTENT/SYLLABUS

**Topic A. Units of measurement** (0.3 CFU): References to the main physical quantities (temperature, pressure, mass, volume, density and specific volume, speed, acceleration, force, energy, power). Fundamental quantities. Systems of units of measurement. The International System. Multiples and submultiples. Conversions of units of measures. References to linear interpolation. Numerical exercises.

**Topic B. Basic concepts and definitions** (0.3 CFU): System and environment. Closed, open, and isolated system. Thermodynamic equilibrium. Properties, thermodynamic state. Internal and external properties. Total, specific, extensive and intensive parameters. Thermodynamic state, transformations. State postulate. Pure substance, thermodynamic phase, simple compressible system. Equations of state. The ideal gas. Numerical exercises.

**Topic C. Calculation of properties** (0.4 CFU): Graphic Pressure-Temperature. Saturated steam. Undercooled liquid. Superheated steam. Determination of the phase of a substance. Internal energy and enthalpy. Calculation of properties in cases of ideal gas, incompressible liquid, solid. Specific heat. Thermal capacity. Numerical exercises.

**Topic D. Mass and energy balances for closed systems** (1 CFU): Thermal and mechanical energy. Balance equation. Mass balance. Energy balance (first law of thermodynamics). Numerical exercises.

**Topic E. Mass and energy balances for open systems** (1.0 CFU): Hypothesis of local equilibrium. One-dimensional motion. Steady regime. The control volume. Mass balance. Mass flow rate. Volumetric flow rate. Energy balance (first law of thermodynamics). Expansion Work. Thermal and mechanical power. Numerical exercises.

**Topic F. The second law of thermodynamics** (0.2 CFU): Statements of Clausius e di Kelvin-Plank. Notes on limits to energy conversion, energy degradation, entropy. The implications of the second law of thermodynamics.

**Topic G. Introduction to heat transfer and conduction** (1.0 CFU): The mechanisms of heat exchange: conduction, convection, and radiation. Heat flow. Fourier's law. Indefinite flat sheet: temperature trend, flow and thermal power, conductance, and thermal resistance. Heat transfer

mechanisms in series and in parallel. Numerical exercises.
**Topic H. Radiative heat exchange** (0.8 CFU): Wave, speed, frequency, period, and wavelength. Electromagnetic radiations and frequencies. Total and monochromatic radiative quantities: emissive power, irradiation, and radiance. Absorption, reflection, and transmission factors (monochromatic and total). Black body. The laws of radiative heat exchange: Stefan-Boltzmann, Planck, Wien. Total and monochromatic emissivity. Gray body. The geometric configuration factor. Energy balance in the evaluation of radiative heat exchange. Greenhouse effect. Numerical exercises.
**Topic I. Heat exchange for combined mechanisms** (0.5 CFU): Examples of combined heat transfer mechanisms. Calculation of the thermal power exchanged for combined mechanisms. Mean unitary conductance (radiative, convective, total). The thermal resistance of air gaps. Overall heat transfer coefficient (stationary unitary thermal transmittance). Notes on the current legal requirements. Numerical exercises.
**Topic L. Humid Air** (1 CFU): Definitions. Thermal-hygrometric properties: dry bulb, wet bulb, adiabatic saturation, and dew point temperatures. Specific enthalpy. Specific volume. Specific humidity and relative humidity. Psychrometric chart. Transformations of humid air: heating, simple cooling, cooling with dehumidification. Adiabatic humidification. Adiabatic mixing. Numerical exercises.
**Topic M. Thermo-hygrometric verification of building envelopes** (1.0 CFU): The condensation of water vapor in the walls, simplified procedure for the thermal and hygrometric analysis of building envelopes. Corrective actions for a wall that has condensation formation. Thermo-hygrometric verification of roofs. Notes on the ISO 13788 standard. Numerical exercises.
**Topic N. Notes on thermal bridges and dynamic thermal parameters of the building envelope** (0.5 CFU): Thermal criticalities of the building envelope (thermal bridges) and hints at the dynamic behavior of building envelope opaque components, through the thermal parameters that allow evaluation of the transient heat exchange (i.e., the so-called dynamic thermal parameters of the walls, to optimize above all the thermal behavior of buildings in summer: surface mass, time lag, decrement factor, dynamic thermal transmittance).

## READINGS/BIBLIOGRAPHY

- Notes, handouts, tables, and diagrams are provided by the teachers.
- For what concerns the humid air and the thermo-hygrometric verification of building envelopes, the following book will be used: L. Bellia, P. Mazzei, F. Minichiello, D. Palma: ARIA UMIDA - Climatizzazione ed involucro edilizio –Ed. Liguori, 2006.

## TEACHING METHODS OF THE COURSE (OR MODULE)

The teaching consists of lectures, including numerical exercises.

## 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
- [x] Numerical exercises

**b) Evaluation pattern**

The test includes exercises to be carried out and oral interviews, during which the student is asked to illustrate and verify the skills and knowledge expected, through questions concerning the topics of the program.

# COURSE DESCRIPTION
# INDUSTRIAL DRAWING

# SSD: DISEGNO INDUSTRIALE (ICAR/13)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: MORONE ALFONSO
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EMAIL: alfonso.morone@unina.it

## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
CHANNEL:
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

### REQUIRED PRELIMINARY COURSES

No preliminary courses are required

### PREREQUISITES

A basic knowledge of the main graphics and drawings software is required.

### LEARNING GOALS

The course, through a specific design process, aims to provide the student with the theoretical, methodological, and operational tools for the implementation of temporary exhibitions. Students will have to consider environmental needs, easy to adapt to different contexts and contents for the realization of a temporary exhibition. The course aims to introduce students to the understanding of the role of design as a tool to enhance the identity of a place, through small temporary exhibitions that push forward new kind of empathy and interaction with the selected places or experiences.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The course aims to provide students with contents about methods, processes, techniques, and tools focused on the entire design process. Understanding will be expanded through a series of lectures on the historical evolution of design.

**Applying knowledge and understanding**

At the end of the whole learning process, students should be able to manage techniques to fix flat sheets of cardboard and to have acquired the right skills to transfer the storytelling of the chosen subjects in a complete graphic layout.

## COURSE CONTENT/SYLLABUS

01 STORYTELLING - 1 week
02_SETTING UP SPATIAL COMPONENTS - 1 week
03_SPATIAL COMPOSITION- 1 weeks
04_FIX CARTBOARD SHEETS - 1 week
05_MENABO'- 1 week
06_ GRAPHIC COMPOSITION - 1 week
07 _ FINAL EXECUTIVE INTEGRATION - 1 week

## READINGS/BIBLIOGRAPHY

R.De Fusco, Storia del design, Laterza, Bari, 1981
Baroni D., Il manuale del design grafico, Longanesi, Milano, 2015.
D'Ambrosio G., Grimaldi P., Lo Studio Grafico, da Gutemberg al piano di identità visiva, Edizioni 10/17, Salerno, 1995.

## TEACHING METHODS OF THE COURSE (OR MODULE)

The learning path includes theoretical lectures (about 10 hours/25% of the total amount of the teaching hours) and, at the same time, a project work.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [x] Written
- [x] Oral
- [x] Project discussion
- [ ] Other

**In case of a written exam, questions refer to**

- [x] Multiple choice answers
- [ ] Open answers

☐ Numerical exercises

**b) Evaluation pattern**

The exam will take place through a group discussion and presentation of the project work.

# COURSE DESCRIPTION
# ARCHITECTURE OF LANDSCAPE

# SSD: ARCHITETTURA DEL PAESAGGIO (ICAR/15)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: GIOFFRE' VINCENZO
PHONE: 081-2532190
EMAIL: vincenzo.gioffre@unina.it

## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
CHANNEL:
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

### REQUIRED PRELIMINARY COURSES

no required preliminary courses

### PREREQUISITES

no prerequisites

### LEARNING GOALS

The aim of the course is to train technicians able to know and be able to apply environmental engineering techniques, park and garden construction techniques, techniques aimed at the restoration of historic parks and gardens.

### EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The student knows the issues related to the aspects of Landscape Architecture and understands the relationships with the other disciplines that contribute to its definition.

**Applying knowledge and understanding**

*The student develops the ability to address issues, including planning, relating to Landscape Architecture by addressing theoretical topics and design elaborations that are confronted with the specificities of landscape architecture in relation to the different degrees of complexity an different scales.*

## COURSE CONTENT/SYLLABUS

The most avant-garde landscape architecture has been transformed into a therapeutic tool, it repairs the innumerable damages present in the urban environment, abandoned places and places of indefinite use, inventing new spaces more suited to life under the banner of industrial decline.
(Michael Jakob, 2009)

Landscape Architecture is a 'young' discipline, in Italy the first courses were included in degree courses about 15 years ago to supplement the courses of 'Garden Art', a discipline that has historically always been present since the beginning of architectural studies. In the same way, the concept of landscape has recently undergone a radical reinterpretation: from a category with a prevalent aesthetic-perceptual character, it is now considered an interpretative/operational category capable of reading and intervening in the complex interrelation between social, productive and ecological characteristics of contemporary cities and territories. An essential contribution in this conceptual evolution is determined by the European Landscape Convention, a Council of Europe document of 2000, which has welcomed and synthesised the most original and innovative contributions of the international debate on the meaning of landscape in a contemporary key. The Convention defines landscape as an ever-changing entity, encompassing both places of extraordinary quality and heritage excellence and those of everyday life and even degradation. Furthermore, the Convention states that the community of inhabitants plays a central role in any process of landscape interpretation or transformation. In line with the most current theoretical and applied research in the field of Landscape Architecture on the international scene, the Course intends to propose an approach to the transformation of the contemporary human habitat centred on the renewed relationship between human activities and natural elements (animals, plants, minerals, water, wind, light, soil); in the study and interpretation of behavioural and social aspects of communities of inhabitants (also with the aid of participatory practices); in the consideration of perceptual aspects and aesthetic quality (not only of landscapes of excellence, but also and above all of everyday and degraded landscapes).

Landscape Architecture is understood as an approach capable of providing some possible answers to the global crises we are experiencing in the contemporary world, from health to environmental and social crises, through a new design attitude, a new operating mode, a new sensitivity towards Nature in its multiple declinations and specificities. The teaching is divided into a series of theoretical lectures - on the etymological meaning and historical evolution of the concept of landscape - on the work of the great masters of landscape architecture of modern and contemporary times; - on the most interesting and recent international experiences focused on the realisation of new landscapes that interpret the themes of ecological transition, urban

agriculture, sustainable mobility, the valorisation of the material and immaterial heritage of communities of inhabitants, and new forms of public space. As part of the didactic experience, a design exercise will be carried out on a site that will be described and presented in the first lesson on the calendar.

## READINGS/BIBLIOGRAPHY

Bibliographic references relating to the subject matter will be given in each lesson. Amongst these, some general bibliographical references are given here:

V. Gioffrè (2018) Latent Landscape, Letteraventidue edizioni
Gioffrè V (2019). Strategie rigenerative per paesaggi mediterranei negletti. In Archistor Extra
Gioffrè V (2020). Riciclare paesaggi: da rifiuto a risorsa. L'industria delle costruzioni,
F. Zagari (1988), L'architettura del giardino contemporaneo, Mondadori
V. Vercelloni (1990), Atlante storico dell'idea del giardino europeo, Jaca Book
M. Venturi Ferriolo (2003), Etiche del paesaggio, il progetto del mondo umano, Editori Riuniti
P. Grimal(2005), L'arte dei Giardini, una breve storia, Donzelli editore
M. Jacob (2009), Il paesaggio, il Mulino
M. Zardini (1996), Paesaggi ibridi. Un viaggio nella città contemporanea, Skira
L. Kroll (1999), Tutto èpaesaggio, Testo &immagine
P. Donadieu (2006), Campagne urbane. Una nuova proposta di paesaggio nella città, Donzelli
G. Clément (2005), Manifesto del terzo paesaggio, Quodlibet
I. McHarg (2007), Progettare con la natura, Franco Muzzio Editore
M. Desvigne (2009), Intermediate natures. The landscapes of Micheal Desvigne, Birkhäuser
S. Marini (2010), Nuove terre, Architetture e paesaggi dello scarto, Quodlibet Studio
G. Clément (2011), Il giardino in movimento, Quodlibet
F. Zagari (2008), Giardini. Manuale di progettazione, Mancosu Editore

## TEACHING METHODS OF THE COURSE (OR MODULE)

Lectures, tutorials, project activity.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [ ] Written
- [x] Oral
- [x] Project discussion
- [ ] Other

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers
- [ ] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

# COURSE DESCRIPTION
# FORMS AND CHARACTERS OF THE CITY

# SSD: COMPOSIZIONE ARCHITETTONICA E URBANA (ICAR/14)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

TEACHER: AMIRANTE ROBERTA
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EMAIL: roberta.amirante@unina.it

## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: FRANCESE
CHANNEL:
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

### REQUIRED PRELIMINARY COURSES

None

### PREREQUISITES

None

### LEARNING GOALS

The course, which is both theoretical and applied, aims to provide students with knowledge related to the heritage of
20th-century Italian urban studies and to frame its most significant developments in contemporary debate. In its
applied component, the course intends to equip students with the skills to read
contexts—especially those related to
architectural projects for cities—using established urban analysis tools to identify morphological, typological, and

spatial characteristics.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

Students are expected to learn how to recognize the modes of construction of urban form throughout its historical evolution and in the contemporary context, and to comprehend the formal logic of settlement structures.

**Applying knowledge and understanding**

Students should demonstrate the ability to investigate the settlement characteristics of contemporary cities; to represent these characteristics as outcomes of the processes that shaped them; and to assess their stability and significance, especially in light of potential transformations.

## COURSE CONTENT/SYLLABUS

Regarding the knowledge of the "forms and characters of the city," and starting from the course's educational objectives, the introductory section is designed to:

- recall and reorganize the notions already acquired by students in previous years;
- clarify and further explore some of the most relevant **key terms** (building typology, urban morphology, architectural form, architectural element, place, context, reference, architectural composition, urban composition...);
- define and interpret the main **formal logics of urban development** (foundation, expansion, transformation, modification, recycling, upcycling...) as well as the principal **methodologies of intervention** (tracing, juxtaposition, incision, voiding, isolation, addition, superimposition, networking...);
- highlight the primary modes of ***description*, *representation*,** and ***narration*** of the city's forms and characters.

In the first part of the course, students will be asked to carry out a series of individual in-class exercises (in the form of *ex tempore* assignments).

In the second part of the course, students will apply the modes of description, representation, and narration previously examined to a concrete case study: Naples' Piazza del Municipio, a particularly significant urban site due to its location, and particularly complex from the standpoint of its "historicity." Through the analysis of this unique example, students will also be encouraged to reflect on the issue of the *"delimitation of the study area"*, on the challenges posed to *disciplinary nomenclature* (which often proves inadequate when confronted with certain spaces of the contemporary city), and will be required to undertake several critical readings of urban space with a view toward its potential reconfiguration.

In this second phase of the course, students will work both individually and in groups on the selected case study, producing a series of outputs that interweave different forms of *symbolic representation* (various types of writing and drawing), also aimed at formulating transformative hypotheses.

## READINGS/BIBLIOGRAPHY

The teaching materials related to the assignments students are required to complete will be provided throughout the various phases of the exercise.
Additionally, recommended readings will be suggested: some are defined at the beginning of the course, while others will be identified in relation to the selected examples.
Among the pre-defined readings:
S. Giedion, *Spazio, tempo e architettura*. Hoepli 1941
K. Lynch, *L'immagine della città* (1960), Marsilio 1969
A. Rossi, *L'architettura della città*, Cittàstudi 1967
Ch. Norberg Schulz, *Esistenza, spazio, architettura* (1971), Officina 1982
G. Perec, *Specie di spazi* (1974), Bollati Boringhieri 1989.
R. Krier, *Lo spazio della città* (1975), Clup 1982
G. Caniggia, *Composizione architettonica e tipologia edilizia. Lettura dell'edilizia di base*, Marsilio 1981
B. Gravagnuolo, *La progettazione urbana in Europa 1750-1950*, Laterza 1991

## TEACHING METHODS OF THE COURSE (OR MODULE)

In person

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- ☐ Written
- ☑ Oral
- ☐ Project discussion
- ☑ Other : Analytical elaborations

**In case of a written exam, questions refer to**

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

**b) Evaluation pattern**

Out of the 30 available points, 15 will be awarded for the oral text and 15 for the analytical assignments.

# COURSE DESCRIPTION
# DIGITAL DESIGN OF TECHNOLOGICAL SYSTEMS

# SSD: TECNOLOGIA DELL'ARCHITETTURA (ICAR/12)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5527 - ATELIER 1
MODULE: U5531 - PROGETTAZIONE DIGITALE DI SISTEMI TECNOLOGICI
TEACHING LANGUAGE:
CHANNEL:
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

### REQUIRED PRELIMINARY COURSES

Technological culture for habitat design (1st year)
Architecture technological design laboratory (2nd year)

### PREREQUISITES

None

### LEARNING GOALS

The synthesis laboratory is a workshop where students, in relation to the involved disciplines, undertake a highly
applied experience. Here, they will understand the criteria, methods, and tools of technological and environmental
architecture design and design development. The focus is on the complexities of design choices and technicalconstruction

decisions in relation to the socio-cultural, technical-productive, and environmental context, using a systemic approach. The end-of-course Atelier aims to experiment with teaching methods that transfer skills, develop
knowledge and understanding, and apply this understanding. It helps direct students towards the workforce or further
education in various degree classes.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The 'synthesis' among the various skills of a future designer is formed during the implementation of a complex educational experience that requires the student to combine not only the different disciplines present in this Atelier— Architecture Technology and Design —but also the results of numerous previous exams, studied and successfully completed, through an in-depth exploration of an architectural theme.
The peculiarity of this specific synthesis laboratory, in addition to the presence of the aforementioned modules, is identified with the intention of conveying to students some current priorities in the fields of digital fabrication and computational design.

**Applying knowledge and understanding**

The Laboratory aims to expand students' knowledge and skills in the field of computational design. Specifically, in the area of computational design, design software will be used, with the support of the teaching staff, which are particularly useful for managing complex shapes and for controlling, throughout the entire process, the design iteration thanks to the necessary use of "computational thinking." In the field of digital fabrication, students will then be encouraged to deepen their understanding of the main topics related to digital manufacturing through the study of dedicated texts, and they will learn about the primary tools to pre-visualize a construction system. These tools will, in particular, be inspired by paradigms of "subtractive manufacturing" (such as CNC milling machines and laser cutters) and additive manufacturing (3D printers). The fundamental goal of the course is to enable students to practically experiment with the mutual influences between the construction system and architectural form in an iterative process that involves continuous feedback between the two fields.

## COURSE CONTENT/SYLLABUS

The design work begins with the analysis of some constructions, recently designed and built, using digital design and fabrication methods, starting with the Serpentine Pavilion (2005) by Álvaro Siza and Eduardo Souto de Moura with Cecil Balmond, which is a true paradigm of the genre. The analysis will be filtered through the type of device used for construction at the micro-level, then deducing the macro-level influences on the final form. In this sense, the adopted typologies will be those proposed by R. Fabbri (2016), particularly including Active-Bending Gridshells, Folded Surfaces, Developable Surfaces, Weaving Patterns, Reciprocal Frames, and systems based on Cross Panels and Modular Boxes. Once a reference typology is chosen, students, divided into groups, will begin a “passing thr buck” between compositional themes and technological themes,

then deepen their understanding of the structural typology and construction strategy until they reach the development of the factory files needed to guide CNC (Computer Numerical Control) machines, as well as nesting and labeling processes aimed at minimizing production waste and providing a comprehensive summary of the operations involved in assembly.

## READINGS/BIBLIOGRAPHY

Suggested pubblications:

Pone S., Colabella S. (2017). Maker. La fabbricazione digitale per l'architettura e il design. Progedit, Bari.
Tedeschi A. (2014). AAD_Algorithms-Aided Design. Le Penseur Publisher, Potenza.
Anderson C., Makers. Il ritorno dei produttori. Per una nuova rivoluzione industriale, Rizzoli Etas, Milano 2013.
Baricco A. (2018). The game. Einaudi, Torino.
Carpo M. (2017). The Second Digital Turn, Mit Press, Cambridge, Usa.

## TEACHING METHODS OF THE COURSE (OR MODULE)

The teachers will hold lessons on digital design and the evolution of digital manufacturing, with particular reference to techniques and tools.
An annual theme will then be developed, focusing on the design of a pavilion that will be conceived for the architectural part using computational design tools and for the construction part using digital fabrication techniques.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [ ] Written
- [x] Oral
- [x] Project discussion
- [ ] Other

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers
- [ ] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

The final evaluation will account for 60% of the results obtained in the course "Digital Design of Technological Systems" and 40% of the outcome of the integrated course "Design for Digital Fabrication."

# COURSE DESCRIPTION
# DIGITAL FABRICATION DESIGN

# SSD: DISEGNO INDUSTRIALE (ICAR/13)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5527 - ATELIER 1
MODULE: U5532 - DESIGN PER LA FABBRICAZIONE DIGITALE
TEACHING LANGUAGE:
CHANNEL:
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 4

### REQUIRED PRELIMINARY COURSES

Technological Culture for Habitat Design (1st year)
Technological Design of Architecture Workshop (2nd year)

### PREREQUISITES

none

### LEARNING GOALS

OBJECTIVES OF THE FINAL SYNTESIS WORKSHOP
The Final Synthesis Workshop is a laboratory-workshop in which students, in relation to the disciplines involved, undertake a strongly practice-oriented experience aimed at understanding the criteria, methods, and tools of technological and environmental design in architecture and design. Within this framework, they focus on the issues of complexity levels and design and construction choices in relation to requirements, as well as to the socio-cultural, technical-productive, and environmental context, following a systemic approach. The course, at the conclusion of the

training program, is intended to experiment with teaching methods aimed at the transfer of skills, the development of knowledge and understanding, as well as the ability to apply such knowledge and understanding. Its goal is to guide students either towards the professional world or towards the continuation of their studies in different degree programs.

SPECIFIC OBJECTIVES OF THE COURSE

As an integration of the Final Sythesis Workshop, the course aims to propose a broad reflection on the world of contemporary design, in its various fields of application and from a variety of different perspectives. Objects and artefacts, both physical and digital - a constitutive part of what is commonly referred to as 'material culture' - will be examined in their sociocultural and anthropological dimensions. Special emphasis will be placed on the notion of affordance, in the context of a reflection on the interaction between bodies and artefacts. The social, political and environmental implications of design - broadly understood as an activity of 'transformation of the existing' - will be also investigated, highlighting both its potentialities and risks.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The “synthesis” of the various skills of a future designer takes shape in the context of a complex educational experience that requires students to combine not only the different disciplines included in this atelier, but also all the competencies acquired throughout their entire course of study. Specifically, this Final Synthesis Studio aims to provide students with some of the most up-to-date notions in the field of digital fabrication and computational design, as well as a comprehensive overview of the issues that animate the contemporary debate on design.

**Applying knowledge and understanding**

The Studio aims to broaden students’ knowledge and skills in the field of digital fabrication and design. In particular, within the field of computational design, students—supported by the teaching staff—will work with parametric design software, which is especially useful for handling complex forms and for monitoring the entire design process through the necessary use of so-called “computational thinking.” Students will then be required to deepen their understanding of the main issues related to digital fabrication through the study of dedicated texts, and they will become familiar with the principal tools used to outline a constructive system—specifically, those inspired by the paradigms of “subtractive manufacturing” (such as CNC milling machines and laser cutters) and additive manufacturing (3D printers). In the design module, on the other hand, students will be asked to demonstrate their ability to apply the theoretical knowledge acquired during the course to the analysis of specific artifacts (whether tangible or digital), adequately highlighting their sociocultural, aesthetic, and political dimensions.

## COURSE CONTENT/SYLLABUS

- Brief history of design, between aestheticization of commodities and social responsibility
- Socio-techno-ecological entanglements: design and the perspective of systemic thinking
- New horizons of social design: design for social innovation and transition design

- The world of makers: democratization of knowledge and social innovation
- Introduction to human-machine interaction. Visibility and comprehensibility in design: from affordances to mental models
- Design and the myth of neutrality. Hostile design and design justice
- Design and politics in tangible and data-based technologies
- Designing dissent: technological disobedience, adversarial design and radical cartographies
- The language of objects: denotation and connotation
- Kitsch and low-cost design. Unconventional aesthetics: camp design

## READINGS/BIBLIOGRAPHY

Davis, J. (2020). *How Artifacts Afford. The Power and Politics of Everyday Things*. MIT Press.
DiSalvo, C. (2012). *Adversarial Design*. MIT Press.
Gratani, F. (2023). *Makers at School. L'apprendimento nell'era post-digitale*. Franco Angeli.
Kuang, C., &Fabricant, R. (2019). *User Friendly: How the Hidden Rules of Design Are Changing the Way We Live, Work, and Play*. WH Allen.
Manzini, E. (2015). *Design, when Everybody Designs: An Introduction to Design for Social Innovation*. MIT Press.
Norman, D.A. (2014). *La caffettiera del masochista. Il design degli oggetti quotidiani.* Giunti editore.

## TEACHING METHODS OF THE COURSE (OR MODULE)

The course is structured in theoretical lectures (70% of the total amount of hours) and exercises (30% of the amount of hours) aimed at the concrete application of the theoretical contents. The exercises will subsequently be gathered into a dossier.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- [ ] Written
- [x] Oral
- [ ] Project discussion
- [x] Other : dossier of exercises

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers
- [ ] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

The final examination of the course - an integral part of the evaluation of the Final Synthesis Workshop - will consist of an oral interview on the theoretical contents as well as on the dossier of excercises carried out by each student.

# COURSE DESCRIPTION
# TECHNOLOGICAL DESIGN FOR THE BUILT ENVIRONMENT

# SSD: TECNOLOGIA DELL'ARCHITETTURA (ICAR/12)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5528 - ATELIER 2
MODULE: U5533 - PROGETTAZIONE TECNOLOGICA PER L'AMBIENTE COSTRUITO
TEACHING LANGUAGE:
CHANNEL:
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 4

### REQUIRED PRELIMINARY COURSES

LABORATORIO DI FONDAMENTI DEL PROGETTO DI ARCHITETTURA

### PREREQUISITES

none

### LEARNING GOALS

The Final Synthesis Architectural Design Studio consists of the teachings of Architectural Design and Architectural Technology.
The Studio aims to increase students' design skills through a critical-interpretative approach to places, investigated in their social, economic and environmental dimensions, and a performance-based approach to set up the intervention strategy, providing methods and tools to control the quality of design solutions from the urban to the building scale.
In line with the objectives of the Degree Course, the Architectural Technology module aims to:

a) understand the issues relating to the operational, procedural, construction and regulatory dimensions of the project, with particular reference to the technological, energy and environmental aspects;
b) address and resolve issues concerning the control of design outcomes through appropriate technological solutions and related performance checks;
c) autonomously evaluate the design choices and technological-environmental solutions;
d) apply the methodological concepts and operational tools necessary to govern the interaction between formal, functional and technical aspects to guarantee the general quality of the work and the reduction of economic and environmental impacts along the life cycle;
e) produce drawings, visuals/infographics and descriptive documents necessary for the development of the proposed design and for the correct and clear transmission of the project to expert and non-expert stakeholders.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

The students must know and be able to understand the technological and environmental aspects of the architectural project, developing the ability to discuss the theoretical and operational advances in the field of technological and environmental design, in order to govern the project in relation to the complexity of the building process. The students will acquire the knowledge of theoretical and methodological tools necessary to analyze the interaction between formal, functional and technical aspects of the project, taking into account the relationship between project objectives and the construction of the work in anticipation of the entire life cycle.

**Applying knowledge and understanding**

The students must be able to apply theacquired knowledge by developing an architectural project, according to a systemic approach and in relation to the environmental and climatic context, user needs, technical procedures and the regulatory framework. The students will increase their ability to solve problems concerning the control of design outcomes through appropriate technological-constructive solutions and performance checks.

## COURSE CONTENT/SYLLABUS

The course intends to provide the theoretical, methodological and operational tools to develop technical and design solutions characterized by levels of detail appropriate to the technological and environmental design of the architecture, controlled in the performance characteristics in relation to the main sector regulations, with particular reference to the themes of green building and the sustainability of the building process.
Students will develop specific skills related to the choice and control of the technological alternatives available to the designer, the integration of building systems/products in the architectural project and their correct description also in support of technical specifications and reports.
Within the course, starting from the project theme of the Final Synthesis Studio, the students will develop a series of technological-constructive insights, integrating the architectural project with the

appropriate performance specifications relating to structural elements, building envelope, plant systems and spaces open.
Specific focuses will concern the control of technological and environmental requirements, including aspects related to the sustainable management of material and energy resources, indoor and outdoor comfort, tecnical systems' integration, applying the Minimum Environmental Criteria for building and techincal protocols for energy and environmental quality, such as the LEED and WELL certification systems
The course will be articulated through seminars, workshops and studio activities which will correspond to a series of deliverables, mainly carried out in the classroom and in teams, which will contribute to the final evaluation.
The course contents focus on the following topics:
•Environmental planning, sustainability and climate neutrality: the objectives of Agenda 2030 and the European Green Deal
•Technological design of architecture, materials and construction techniques
•Building envelope and environmental performance: sustainability, resilience and performance control (Climate resilience; Bioclimatic design and energy efficiency; Nature-Based Solutions; Acoustic design; Technical protocols and environmental criteria for project performance control)

## READINGS/BIBLIOGRAPHY


•Bellew, P. (2015), *Invisible Architecture: Atelier Ten*, Laurence King Publishing.
•Buckminster Fuller, R. (1969). *Operating manual for spaceship earth*. New York: EP Dutton &Co.
•Braungart, M., McDonough, W. (2002), *Cradle to Cradle: Remaking the Way We Make Things*, North Point Press.
•Liedl, P., Hausladen, G., &Saldanha, M. (2012). *Building to suit the climate: A handbook*. Walter de Gruyter.
•Tucci F. (2018), *Costruire e abitare green*, Altralinea edizioni, Firenze.
•U.S. Green Building Council (2013), *LEED Reference Guide for Building Design and construction* , USGBC.
•Walker, B., &Salt, D. (2012). *Resilience thinking: sustaining ecosystems and people in a changing world*. Island Press.
•Educational materials provided during the course


## TEACHING METHODS OF THE COURSE (OR MODULE)

The course includes: a) lectures for about 30% of the total hours, b) seminars held by external experts for about 10% of the total hours, c) laboratory activities to deepen the applied knowledge for about 60% of the total hours. The lectures and teaching materials will be made available online on the TEAMS teaching channel.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

☐ Written

☑ Oral

- [x] Project discussion
- [ ] Other

**In case of a written exam, questions refer to**

- [ ] Multiple choice answers
- [ ] Open answers
- [ ] Numerical exercises

**b) Evaluation pattern**

The final evaluation will take into account the levels of participation in the teamwork in the workshop and exercise activities carried out, as well as the ability to convey the main theoretical contents in the final presentation (which may include tables, videos, real and virtual models) and in the discussion of the design documents of the course starting from the results of the design experiments conducted. The final assessment relating to the teaching module will contribute to the overall assessment for the Final Synthesis Studio, weighting the final grade on the basis of the credits provided for each course.

# COURSE DESCRIPTION
# INTERIOR ARCHITECTURE DESIGN FOR THE BUILT

# SSD: ARCHITETTURA DEGLI INTERNI E ALLESTIMENTO (ICAR/16)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5529 - ATELIER 3
MODULE: U5534 - PROGETTO DELL'INTERNO ARCHITETTONICO NELL'ESISTENTE
TEACHING LANGUAGE:
CHANNEL:
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

### REQUIRED PRELIMINARY COURSES

the one provided for by the Study Plan

### PREREQUISITES

The student who starts the Atelier 3 laboratory must have knowledge of two- and three-dimensional drawing techniques,
rendering and have the ability to work with physical study models.

### LEARNING GOALS

To educate students who are aware of the processes of architectural design construction,
starting from the inside, from the human body, outward, be it constructed
(architectural interior) or natural (landscape). They must always be aware that

the constructive element that generates space and built form is, if known and understood,
the key to mastering the spirit of an architecture, and thus consciously attempting to modify
and integrate it with new elements, consistent with its own profound nature.

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

At the end of the course, the student will be able to size the internal space (domestic and otherwise) starting
from the needs of people that are not only physical and quantitative, but also emotional and psychological,
as well as from the constraints given by working with historical pre-existences, while the form of architecture
remains a comprehensive service (physical and psychological in fact) to the person.

**Applying knowledge and understanding**

At the end of the course, the student will be able to understand the methodologies for starting a phenomenological
project starting from building or natural structures that have come down to us from the past, but always
paying attention to the technical and construction aspects typical of the small scale of the architectural
project and pertinent to coexisting with pre-existing structures.

## COURSE CONTENT/SYLLABUS

The aim of the course is to form in the student the awareness that the construction of the space in which man lives,
works and lives always starts where man "gathers" - physically and psychologically - to "put in order" his things,
his thoughts, his affections, always knowing how to relate the construction of the new with the pre-existing building
when this has sensitive and quality traces. Always determines - the space - ways of interaction between people and
the mutual abilities to relate fruitfully with the city and with nature, especially if it is inserted in works
that have traces deriving from the past. The internal/interior space, moreover, is the place where tactilely
people come into contact with architecture also on a material and constructive level.

1. redesign of Ralph Erskine's The Box shed and 1/50 model
2. development of the course project, i.e. a volumetric expansion that, respecting the pre-existing structure (the graphics of which will be delivered at the beginning of the course) defines a new residential space for the artist and exhibition spaces
3. preparation of final presentation ppt, project tables (2 vertical A1 format tables), 1/50 model

## READINGS/BIBLIOGRAPHY

The specific teaching material relating to the architectural pre-existence to be revisited and integrated functionally
and compositionally will be delivered at the beginning of the course, and will concern the project area shared with the
Restoration teacher
To complete the basic teaching material, a minimum of bibliography is considered that orients the point of view on
the project that will be pursued in the course
Bibliography:

Inaki Abalos, Il buon abitare, Marinotti, Milan, 2009.
Italo Calvino, Lezioni americane, Garzanti, Milan, 1988.
Adriano Cornoldi, Le case degli architetti, Venice, 2001.
Nicola Flora, Francesca Iarrusso, Progetti mobili, LetteraVentidue, Siracusa, 2017.
Eduard T. Hall, La dimensione nascosto, Bompiani, Milan, 1968.

Christian Norberg-Schulz, L’abitare, Electa, Milan, 1984.

## TEACHING METHODS OF THE COURSE (OR MODULE)

The course will develop from a knowledge (direct, if possible) of the project areas, to be shared with the Restoration who integrates Ateler 3. General theoretical-disciplinary lectures will alternate with laboratory work, which will be carried out in small groups of up to three people, under the constant supervision (in person) of the instructor and tutors/PhD students. The instructor's lectures will be alternated, according to a schedule provided at the beginning of the course, with guest lectures that will complement the teaching on individual and specific topics related to the course themes. The specific theme of the course this year will be the creation of a home/workshop for an artistic practitioner (musician, writer, sculptor, painter, singer, filmmaker, dancer) starting from a pre-existing building that will be (possibly) visited.

## EXAMINATION/EVALUATION CRITERIA

**a) Exam type**

- ☐ Written
- ☑ Oral
- ☑ Project discussion
- ☑ Other : 5-minute summary ppt presentation, two A1 vertical tables on rigid support illustrating the project in plan, section, significant three-dimensional views and photo insertions, with 3D model and final model, in addition to the presentation of study and final models set in the 1/50 or 1/25 scale lot, and a vertical A4 project summary book narrating the design process and containing a descriptive sheet of the spirit of the work of at least 3000 keystrokes

**In case of a written exam, questions refer to**

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

**b) Evaluation pattern**

The final grade, based on the results and skills demonstrated in the discussion of the project paper as well as the
themes of Interior Architecture, will be weighted on the CFU of each of the two courses that together make up the
integrated course of the final synthesis laboratory (Interior Architecture 3/5 of the final grade,
and Restoration 2/5 of the final grade)

# COURSE DESCRIPTION
# CONSERVATION AND ENHANCEMENT OF ARCHITECTURAL HERITAGE

# SSD: RESTAURO (ICAR/19)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2025/2026

## COURSE DESCRIPTION

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## GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5529 - ATELIER 3
MODULE: U5535 - PROGETTO DI RESTAURO E VALORIZZAZIONE DEL PATRIMONIO ARCHITETTONICO
TEACHING LANGUAGE:
CHANNEL:
YEAR OF THE DEGREE PROGRAMME: III
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 4

### REQUIRED PRELIMINARY COURSES

*The one provided for by the study plan*

### PREREQUISITES

*None.*

### LEARNING GOALS

*The course CONSERVATION AND ENHANCEMENT OF ARCHITECTURAL HERITAGE, which forms part of Atelier III, aims to introduce students to the restoration of built heritage. The course aims to teach students the methodology of architectural restoration in its various phases —knowledge, diagnosis and design —through specialist concepts. In other words, the course provides students with the tools to analyse ancient buildings independently, identifying and evaluating historical and constructional events, as well as phenomena of instability and*

*degradation. Students will also learn to recognise the tangible and intangible values of these buildings, and how to pass these on to new generations through architectural restoration and refurbishment projects.*

## EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

**Knowledge and understanding**

Students must:

- demonstrate knowledge of architectural restoration project methodology at the architectural scale, in relation to current disciplinary debate;
- demonstrate knowledge of methods for critically interpreting built heritage in relation to historical transformations over time;
- demonstrate knowledge and interpretation of the tangible and intangible cultural values that govern choices for the protection, conservation, management and enhancement of the built heritage;
- demonstrate knowledge of techniques for analysing and representing the construction systems of historical architecture and the phenomena of instability and degradation of the built heritage;
- demonstrate the ability to define design strategies for the enhancement and improvement of the use of the built heritage.

**Applying knowledge and understanding**

*Students must:*

*- demonstrate their ability to develop critical and interpretative skills with regard to built heritage;*
*- apply visual investigation methods to understand the material, morphological, typological, constructional, and structural aspects of built heritage;*
*- demonstrate their ability to use advanced IT techniques and tools to critically represent heritage in its historical context, as well as in terms of deterioration and degradation;*
*- develop initial hypotheses for culturally aware restoration, conservation, reuse and enhancement projects for built heritage in line with disciplinary and regulatory guidelines.*

*Students must also acquire the learning skills needed to broaden their knowledge by consulting diverse bibliographic sources and participating in seminars, conferences and workshops.*

## COURSE CONTENT/SYLLABUS

The principles of conservation, protection and restoration are set out in the current disciplinary guidelines.

The notion of cultural heritage and its evolution. The notion of cultural heritage and how the concept has evolved.

Some theoretical issues include the relationship between structure and architectural surface, how gaps are treated, and the relationship between permanence and transformation in restoration,

which is a matrix of the relationship between old and new.
Operational criteria include minimal intervention, distinguishability, compatibility, durability, reversibility and authenticity. Accessibility of historical architecture.
The methodology of architectural restoration. Direct and indirect investigations. Geometric dimensional surveying. Reading the building and its structural components (foundations, walls, vaults, floors, roofs and staircases), materials and decorations.
Identification of static structures, cracks, and signs of deterioration. Criteria for the graphic representation of deterioration and instability.
Choosing appropriate functions: identifying the values and critical issues of the building and its context. Restoration, consolidation and repurposing interventions.

## READINGS/BIBLIOGRAPHY

*A. Aveta, Materiali e tecniche tradizionali nel napoletano, Napoli 1987.*
*G. Carbonara, Gli orientamenti attuali del restauro architettonico, in Restauro dalla teoria alla prassi, a cura di S. Casiello, Napoli 2000, pp. 9-27.*
*Atlante delle tecniche costruttive tradizionali. Napoli terra di lavoro (XVI-XIX), a cura di G. Fiengo, L. Guerriero, Arte Tipografica, Napoli 2008.*
*G. Carbonara, Architettura d'oggi e restauro. Un confronto antico-nuovo, Utet, Torino 2011.*
*L'Arte del costruire in Campania tra Restauro e sicurezza strutturale, a cura di R. Picone, V. Russo, ed. Clean, Napoli 2018. Across the Stones Immagini, paesaggi e memoria.*
*La conoscenza interdisciplinare per la conservazione e la valorizzazione della Fortezza del Girifalco, a cura di B. G. Marino, Editori Paparo, Napoli 2019*
*Codice dei Beni Culturali e del Paesaggio, art. 29. Linee Guida per il superamento delle barriere architettoniche nei luoghi di interesse culturale, II edizione rivista e ampliata, Ministero per i Beni e le Attività Culturali, Gangemi, Roma 2009 + Direttiva 2 febbraio 2011.*
*Linee Guida per la valutazione e riduzione del rischio sismico del patrimonio culturale allineate alle nuove Norme tecniche per le costruzioni, 2011.*
*Norma UNI 11182, Beni culturali, Materiali lapidei naturali ed artificiali. Descrizione delle forme di alterazione e degradazione. Termini e definizioni.*

## TEACHING METHODS OF THE COURSE (OR MODULE)

*Teaching will be delivered through a combination of lectures, laboratory activities and site visits.*

## 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**

*At the end of the course, students must demonstrate that they have acquired the methodology for the knowledge, critical interpretation and design of the restoration of architectural heritage, in line with the reference theoretical framework, as evidenced by the year-long project they have developed. The examination will test students' knowledge of the topics covered during the lessons and will involve a discussion of their project. The final grade will be based on the maturity of their understanding of the theoretical topics, the relationship between the conceptual and design components, and their ability to present and summarise. The final mark will be weighted according to the credits for each course and composed as follows: Interior Architectural Design in Existing Buildings (6 credits): 3/5 of the final mark; CONSERVATION AND ENHANCEMENT OF ARCHITECTURAL HERITAGE (4 credits): 2/5 of the final mark.*