COURSE DESCRIPTION
ARCHITECTURAL DRAWING

SSD: DISEGNO (ICAR/17)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: DELLA CORTE TERESA
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5512 - LABORATORIO DI DISEGNO DELL'ARCHITETTURA
MODULE: 52491 - DISEGNO DELL'ARCHITETTURA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 5

REQUIRED PRELIMINARY COURSES

There are no required preliminary courses.

PREREQUISITES

There are no prerequisites.

LEARNING GOALS

The aim is to provide the necessary skills to represent architecture and make possible the figuration of space through the construction of graphic models.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The student is introduced to the theories and techniques of Architectural Survey and Representation through lectures, seminars, exercises and on-site visits. The student thus understands the specifucities of their application with reference to traditional techniquesand the

more recent evolutions linked to the use of new technologies.

Applying knowledge and understanding

The student develops the ability to interpret architectural drawings and to produce graphic elaborations through various representation techniques. The student also develops the ability to read and survey the built environment at various scales. These skills are applied in the laboratories.

COURSE CONTENT/SYLLABUS

The contents of the course are aimed at learning the concepts of perception, interpretation and representation of architecture through related graphic and infographic tools, following a course of study that starts from the Architectural Orders and prepares the themes of modern and contemporary architecture by specifically covering the following topics: Interpretation and transcription of architecture. Projections: the plan the elevation and the section (3 CFU) - Origins and codification of architectural drawing (1 CFU) - Three-dimensional reading and interpretation of architectural spatiality through axonometry (1 CFU).

READINGS/BIBLIOGRAPHY

The essential and reference bibliography contained in the course syllabus (main and recommended texts) is given below; it is supplemented during the course developments by supporting materials that can be downloaded from the lecturer's institutional website and collected in the Educational Material folder.

-Edwin Abbott, *Flatlandia. Racconto fantastico a più dimensioni*, Adelphi Edizioni, Milano 1966.
-Giacomo Barozzi da Vignola, *Regola delli cinque ordini d'architettura*, ristampa anastatica dell'edizione del 1607, Arnaldo Forni Editore, Bologna 1988.
-Giuseppe Boidi-Trotti*, I cinque ordini del Vignola ossia Manuale di Disegno Architettonico,* Torino 1876.
-Manlio Brusatin, *Storia delle linee*, Einaudi, Torino 1993.
-Teresa Della Corte, *Declinazioni della trasparenza in architettura. Una indagine sulla complessità attraverso la differenza/Declinations of transparency in architecture. A survey about complexity through the difference*, Officina Edizioni, Roma 2020.
-Teresa Della Corte, Riccardo Florio, *La Rappresentazione dello spazio domestico 1, Dieci interpretazioni dell'abitazione contemporanea,* Officina Edizioni, Roma 2008.
-Giuseppe Di Napoli, *Disegnare e conoscere. La mano, l'occhio, il segno*, Einaudi, Torino 2004.
-Mario Docci, *Manuale di Disegno architettonico*, Editori Laterza, Roma-Bari 1987.
-Riccardo Florio, *Origini evoluzioni e permanenze della classicità in architettura, Un'esperienza di conoscenza disegno e rappresentazione dell'architettura,* Officina Edizioni, Seconda edizione, Roma 2004. Seconda edizione 2018.
-Riccardo Florio, *Sul Disegno Riflessioni sul disegno di architettura. About Drawing Reflections about architectural drawing*, Officina Edizioni, Roma 2012.
-Jacques Guillerme, *La figurazione in architettura*, Franco Angeli, Milano 1982.

-Le Corbusier, *Il Linguaggio delle pietre*, Marsilio, Venezia 1988.
Riccardo Migliari, *Il disegno degli ordini e il rilievo dell'architettura classica: Cinque Pezzi Facili*, in <<disegnare idee immagini>>, anno II, n. 2, giugno 1991.
-Henry Millon e Vittorio Magnago Lampugnani, a cura di, *Rinascimento. Da Brunelleschi a Michelangelo. La Rappresentazione dell'Architettura*, Bompiani, Milano 1994.
-Antonio Monestiroli, *La metopa e il triglifo*. Nove lezioni di architettura, Editori Laterza, Bari 2002.
-Franco Purini, *Una lezione sul Disegno*, Gangemi Editore, Roma 2007.
-Ludovico Quaroni, *Progettare un edificio. Otto lezioni di architettura,* Mazzotta, Milano 1977.
-Mario Sironi, *Il mito dell'architettura*, Mazzotta, Milano 1990. -John Summerson, Il linguaggio classico dell'architettura. Dal Rinascimento ai maestri contemporanei, Einaudi, Torino 2000.
-Vitruvio, *De Architectura*, a cura di Pierre Gros, Einaudi, Torino 1997 (in particolare il *Libro Primo*).
-Wim Wenders, *L'atto di Vedere. The act of Seeing*, Ubulibri, Milano 1992.

TEACHING METHODS OF THE COURSE (OR MODULE)

Lectures and practical exercises. The didactic organization makes use of theoretical lectures (about 50% of the total hours) and application activities for drawing (about 30% of the total hours) preceded by a manual drawing phase in the classroom (about 20% of the total hours) from which the experiential path is initiated.

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- ☐ Written
- ☑ Oral
- ☐ Project discussion
- ☑ Other : discussion of graphic designs

In case of a written exam, questions refer to

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

b) Evaluation pattern

The assessment method is equal between the representative papers and the oral discussion on the topics covered during the course.

COURSE DESCRIPTION
ARCHITECTURAL DRAWING

SSD: DISEGNO (ICAR/17)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: CATUOGNO RAFFAELE
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5512 - LABORATORIO DI DISEGNO DELL'ARCHITETTURA
MODULE: 52491 - DISEGNO DELL'ARCHITETTURA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 5

REQUIRED PRELIMINARY COURSES

There are no required preliminary courses.

PREREQUISITES

There are no prerequisites.

LEARNING GOALS

The goal is to provide the tools necessary to represent architecture and make possible the figuration of space through the construction of graphic models.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Through face-to-face courses, seminars, tutorials and field trips, the student is familiar with the theories and techniques of surveying and representing architecture, understanding their specific applications with reference to traditional techniques and more recent developments related to the

use of new technologies.

Applying knowledge and understanding

The student develops the ability to interpret architectural drawings and produce graphic elaborations through various representational techniques, as well as the ability to read and survey the built environment in its various articulations and at various scales. These skills are applied within the laboratories.

COURSE CONTENT/SYLLABUS

The course content is aimed at learning the concepts of perception, interpretation, and representation of architecture through relevant graphic and infographic tools, following a study path that starts from the Architectural Orders and introduces the themes of modern and contemporary architecture. Specifically, the course covers the following topics:

- **Interpretation and transcription of architecture**, focusing on how to read and translate architectural elements into visual representations, using tools such as floor plans, elevations, and sections (3 CFU).
- **Origins and codification of architectural drawing** (1 CFU), which explores the historical evolution and development of the rules of architectural drawing.
- **Three-dimensional reading and interpretation of architectural spatiality through axonometry** (1 CFU), focusing on understanding and representing spaces in three dimensions.

These topics provide a solid foundation for developing skills in spatial interpretation and representation in architecture.

READINGS/BIBLIOGRAPHY

The essential and reference bibliography contained in the course syllabus (main texts and recommended readings) is listed below; it will be supplemented during the course with support materials available on the instructor's institutional website and collected in the folder "Teaching Materials."

- Edwin Abbott, *Flatlandia. Racconto fantastico a più dimensioni*, Adelphi Edizioni, Milano 1966.
- Giacomo Barozzi da Vignola, *Regola delli cinque ordini d'architettura*, ristampa anastatica dell'edizione del 1607, Arnaldo Forni Editore, Bologna 1988.
- Giuseppe Boidi-Trotti, *I cinque ordini del Vignola ossia Manuale di Disegno Architettonico*, Torino 1876.
- Manlio Brusatin, *Storia delle linee*, Einaudi, Torino 1993.
- Raffaele Catuogno, *Disegno e Geometria nell'Opera di Gaudì*, Giannini Editore, Napoli, 2012.
- Giuseppe Di Napoli, *Disegnare e conoscere. La mano, l'occhio, il segno*, Einaudi, Torino 2004.
- Mario Docci, *Manuale di Disegno architettonico*, Editori Laterza, Roma-Bari 1987.
- Riccardo Florio, *Origini evoluzioni e permanenze della classicità in architettura, Un'esperienza di conoscenza disegno e rappresentazione dell'architettura*, Officina Edizioni, Seconda edizione, Roma 2004. Seconda edizione 2018.
- Riccardo Florio, *Sul Disegno. Riflessioni sul disegno di architettura. About Drawing. Reflections about architectural drawing*, Officina Edizioni, Roma 2012.

•Jacques Guillerme, *La figurazione in architettura*, Franco Angeli, Milano 1982.
•Le Corbusier, *Il Linguaggio delle pietre*, Marsilio, Venezia 1988.
•Riccardo Migliari, *Il disegno degli ordini e il rilievo dell'architettura classica: Cinque Pezzi Facili*, in <<disegnare idee immagini>>, anno II, n. 2, giugno 1991.
•Henry Millon e Vittorio Magnago Lampugnani (a cura di), *Rinascimento. Da Brunelleschi a Michelangelo. La Rappresentazione dell'Architettura*, Bompiani, Milano 1994.
•Antonio Monestiroli, *La metopa e il triglifo. Nove lezioni di architettura*, Editori Laterza, Bari 2002.
•Franco Purini, *Una lezione sul Disegno*, Gangemi Editore, Roma 2007.
•Ludovico Quaroni, *Progettare un edificio. Otto lezioni di architettura*, Mazzotta, Milano 1977.
•Mario Sironi, *Il mito dell'architettura*, Mazzotta, Milano 1990.
•John Summerson, *Il linguaggio classico dell'architettura. Dal Rinascimento ai maestri contemporanei*, Einaudi, Torino 2000.
•Vitruvio, *De Architectura*, a cura di Pierre Gros, Einaudi, Torino 1997 (in particolare il Libro Primo).
•Wim Wenders, *L'atto di Vedere. The act of Seeing*, Ubulibri, Milano 1992.

TEACHING METHODS OF THE COURSE (OR MODULE)

Lectures and practical exercises. The didactic organization makes use of theoretical lectures (about 50% of the total hours) and application activities for drawing (about 30% of the total hours) preceded by a manual drawing phase in the classroom (about 20% of the total hours) from which the experiential path is initiated.

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- ☐ Written
- ☑ Oral
- ☐ Project discussion
- ☑ Other : discussion of graphic designs

In case of a written exam, questions refer to

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

b) Evaluation pattern

The assessment method is equal between the representative papers and the oral discussion on the topics covered during the course.

COURSE DESCRIPTION
ARCHITECTURAL DRAWING

SSD: DISEGNO (ICAR/17)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: SCANDURRA SIMONA
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5512 - LABORATORIO DI DISEGNO DELL'ARCHITETTURA
MODULE: 52491 - DISEGNO DELL'ARCHITETTURA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 03 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 5

REQUIRED PRELIMINARY COURSES

Nothing.

PREREQUISITES

Nothing.

LEARNING GOALS

The aim is to provide the necessary skills to represent architecture and make possible the figuration of space through the construction of graphic models.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The student is introduced to the theories and techniques of Architectural Survey and Representation through lectures, seminars, exercises and on-site visits. The student thus understands the specificities of their application with reference to traditional techniques and the

more recent evolutions linked to the use of new technologies.

Applying knowledge and understanding
The student develops the ability to interpret architectural drawings and to produce graphic elaborations through various representation techniques. The student also develops the ability to read and survey the built environment at various scales. These skills are applied in teh laboratories.

COURSE CONTENT/SYLLABUS

The course covers the tools and techniques useful for translating architectural reality, whether existing or planned, into its representation.
Specifically, the following themes will be addressed:
- Tools and techniques of representation;
- Concept of plan, elevation and section;
- Monge method;
- Proportioning and modularity.
- Graphic conventions, reduction scales, dimensioning methods, symbologies;
- The representation of stairs;
- Layout of graphic work;
- Representation of the case study.

READINGS/BIBLIOGRAPHY

- M. Docci, M. Gaiani, D. Maestri, *Scienza del Disegno*, Città Studi, 2021.
- R. De Rubertis, *Il disegno dell'architettura*, Carocci, Roma 2005.
- V. Ugo, *Fondamenti della rappresentazione architettonica*, Esculapio, Bologna 1994.
- M. Docci, *Manuale di disegno architettonico*, Laterza, Roma 1990.

TEACHING METHODS OF THE COURSE (OR MODULE)

The course consists of theoretical lectures and practical exercises relating to the topics covered. The exercises will be carried out in the classroom and at home and will be verified during the examination. In particular, a case study will be assigned to verify the knowledge acquired.

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- ☐ Written
- ☑ Oral
- ☐ Project discussion
- ☑ Other : Discussion of graphic works.

In case of a written exam, questions refer to

- ☐ Multiple choice answers

☐ Open answers

☐ Numerical exercises

b) Evaluation pattern

COURSE DESCRIPTION
APPLICATIONS OF DESCRIPTIVE GEOMETRY

SSD: DISEGNO (ICAR/17)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2023/2024

COURSE DESCRIPTION

TEACHER: TRIGGIANESE ANGELO
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5512 - LABORATORIO DI DISEGNO DELL'ARCHITETTURA
MODULE: 01512 - APPLICAZIONI DI GEOMETRIA DESCRITTIVA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 5

REQUIRED PRELIMINARY COURSES

None

PREREQUISITES

None

LEARNING GOALS

The aim of this course is to provide the **fundamentals** and the **scientific methods** of **Descriptive Geometry** and its **applications** in architecture while introducing the **basics of Computer-aided design (CAD)**. The lessons will focus on the study of **tools** and **techniques** aimed at representing architecture and allowing the figuration of space through **digital** and **graphic models**. Moreover, Descriptive Geometry will be analyzed in its **theoretical and scientific aspects**, as well as the **methodological-operational** ones, in order to provide the knowledge and tools to interpret and represent the built environment and to design the architectural project.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

By the end of the course, students should know:

1. The fundamentals of Projective Geometry.
2. The methods of Descriptive Geometry, especially Monge's Method of Orthogonal Projections, the method of Axonometric projection and the method of Perspective projection.
3. The geometric classification of surfaces as well as their genesis and main properties.
4. The main tools of traditional and digital representation.

Students should also be able to recognize the different shapes of architecture, their geometric peculiarities and to pick the most suitable methods of representation in order to adequately describe the analyzed configurations. In addition, students must prove they can understand the stereometric nature of space and use the methods of representation with critical thinking, scientific knowledge and graphic sensibility, in order to highlight the main features of an architectural space. Finally, students must know the founding principles of the geometric genesis and development of surfaces, while being able to apply them to control the creative process with the help of bidimensional and three-dimensional representation tools.

Applying knowledge and understanding

The acquired knowledge on projective methods and geometric configuration of architecture will allow students to control and prefigure designed spaces while achieving an effective and rigorous communication of the project. The same knowledge will allow them to critically interpret the existent architectures for the purpose of survey and representation. The tools of digital representation will allow students to understand, analyze and communicate the architectural space with effective and rigorous language.

COURSE CONTENT/SYLLABUS

Descriptive Geometry is a science which deals with the geometric figures of the space, transcribing their models in visual language. The discipline will be presented as a complement of the Drawing of Architecture and, therefore, the methods of representation will be introduced with a theoretical and practical approach, with the aim of guiding students in the visualization and reading of the different configurations of an architectural space, from paper to digital.

APPLICATIONS OF DESCRIPTIVE GEOMETRY

Projective geometry

•Overview and general information
•Main operations
•Projectivity and prospectivity

Homology

•The reference in space and on the plane
•Properties and graphic operations
•Special cases (analogy, homothety, translation)

•Flipping Homology

Axonometry

•Overview and general information

Orthogonal axonometry

•Definition and main features

Oblique axonometry

•The reference in space and on the plane

•Cavalier axonometry as the homologous transformation of orthogonal projections

Perspective

•Overview and general information

•The reference in space and on the plane

•The representation of fundmental geometric entities

•The flipping method

•Determination of perspective heights

•Perspective section

Vaults and surfaces

•Overview and general information

•Surfaces of revolution

•Ribbed surfaces

Genesis and representation of vaults

•Barrel vault

•Barrel vault with lunettes

•Cross vault

•Cloister vault

•Bohemian vault

Conic sections

•ellipse, parabola, hyperbola (definition and geometric genesis)

COMPUTER-AIDED DESIGN (CAD)

Overview and general information

•Main principles and fundamentals of CAD: tools and methods

•Difference between vectorial-based and raster-based software; interaction between the two different categories.

The virtual working area

•Drawing settings and relationship with “analogic” drawing

•Digital representation main apps between bi-dimensionality and three-dimensionality.

The tools of digital drawing

•Standard primitives

•Object properties

•Software for bi-dimensional representation

•Print management
•Software for three-dimensional representation

READINGS/BIBLIOGRAPHY

Textbook

Gesuele A, Pagliano A., Verza A., *La geometria animata. Lezioni multimediali di geometria descrittiva*, Libreria Editrice Cafoscarina, 2018

Additional suggested books (optional)

Migliari, R., *Geometria Descrittiva. Metodi e Costruzioni. Volumi I e II*, Città Studi Edizioni, 2009

Docci M., Gaiani M., Maestri D., *Scienza del disegno,* Città Studi Edizioni, 2021

TEACHING METHODS OF THE COURSE (OR MODULE)

The course is divided in theoretical lessons, in-class practical lessons, practical exercises (individual and/or group activities and revisions).

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- ☐ Written
- ☑ Oral
- ☐ Project discussion
- ☑ Other : Discussion of graphic works

In case of a written exam, questions refer to

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

b) Evaluation pattern

COURSE DESCRIPTION
APPLICATIONS OF DESCRIPTIVE GEOMETRY

SSD: DISEGNO (ICAR/17)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2023/2024

COURSE DESCRIPTION

TEACHER: SCOVOTTO DANIELA
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5512 - LABORATORIO DI DISEGNO DELL'ARCHITETTURA
MODULE: 01512 - APPLICAZIONI DI GEOMETRIA DESCRITTIVA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 5

REQUIRED PRELIMINARY COURSES

None

PREREQUISITES

None

LEARNING GOALS

The aim of this course is to provide the **fundamentals** and the **scientific methods** of **Descriptive Geometry** and its **applications** in architecture while introducing the **basics of Computer-aided design (CAD)**. The lessons will focus on the study of **tools** and **techniques** aimed at representing architecture and allowing the figuration of space through **digital** and **graphic models**. Moreover, Descriptive Geometry will be analyzed in its **theoretical and scientific aspects**, as well as the **methodological-operational** ones, in order to provide the knowledge and tools to interpret and represent the built environment and to design the architectural project.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

By the end of the course, students should know: 1. The fundamentals of Projective Geometry. 2. The methods of Descriptive Geometry, especially Monge's Method of Orthogonal Projections, the method of Axonometric projection and the method of Perspective projection. 3. The geometric classification of surfaces as well as their genesis and main properties. 4. The main tools of traditional and digital representation. Students should also be able to recognize the different shapes of architecture, their geometric peculiarities and to pick the most suitable methods of representation in order to adequately describe the analyzed configurations. In addition, students must prove they can understand the stereometric nature of space and use the methods of representation with critical thinking, scientific knowledge and graphic sensibility, in order to highlight the main features of an architectural space. Finally, students must know the founding principles of the geometric genesis and development of surfaces, while being able to apply them to control the creative process with the help of bidimensional and three-dimensional representation tools.

Applying knowledge and understanding

The acquired knowledge on projective methods and geometric configuration of architecture will allow students to control and prefigure designed spaces while achieving an effective and rigorous communication of the project. The same knowledge will allow them to critically interpret the existent architectures for the purpose of survey and representation. The tools of digital representation will allow students to understand, analyze and communicate the architectural space with effective and rigorous language.

COURSE CONTENT/SYLLABUS

Descriptive Geometry is a science which deals with the geometric figures of the space, transcribing their models in visual language. The discipline will be presented as a complement of the Drawing of Architecture and, therefore, the methods of representation will be introduced with a theoretical and practical approach, with the aim of guiding students in the visualization and reading of the different configurations of an architectural space, from paper to digital. **APPLICATIONS OF DESCRIPTIVE GEOMETRY Projective geometry**

•Overview and general information
•Main operations
•Projectivity and prospectivity

Homology

•The reference in space and on the plane
•Properties and graphic operations
•Special cases (analogy, homothety, translation)
•Flipping Homology

Axonometry

•Overview and general information

Orthogonal axonometry

•Definition and main features

Oblique axonometry

•The reference in space and on the plane

•Cavalier axonometry as the homologous transformation of orthogonal projections

Perspective

•Overview and general information

•The reference in space and on the plane

•The representation of fundmental geometric entities

•The flipping method

•Determination of perspective heights

•Perspective section

Vaults and surfaces

•Overview and general information

•Surfaces of revolution

•Ribbed surfaces

Genesis and representation of vaults

•Barrel vault

•Barrel vault with lunettes

•Cross vault

•Cloister vault

•Bohemian vault

Conic sections

•ellipse, parabola, hyperbola (definition and geometric genesis)

COMPUTER-AIDED DESIGN (CAD)

•Overview and general information

•Main principles and fundamentals of CAD: tools and methods

•Difference between vectorial-based and raster-based software; interaction between the two different categories.

The virtual working area

•Drawing settings and relationship with “analogic” drawing

•Digital representation main apps between bi-dimensionality and three-dimensionality.

The tools of digital drawing

•Standard primitives

•Object properties

•Software for bi-dimensional representation

•Print management

•Software for three-dimensional representation

READINGS/BIBLIOGRAPHY

Textbook Gesuele A, Pagliano A., Verza A., *La geometria animata. Lezioni multimediali di geometria descrittiva*, Libreria Editrice Cafoscarina, 2018 **Additional suggested books (optional)** Migliari, R., *Geometria Descrittiva. Metodi e Costruzioni. Volumi I e II*, Città Studi Edizioni, 2009 Docci M., Gaiani M., Maestri D., *Scienza del disegno,* Città Studi Edizioni, 2021

TEACHING METHODS OF THE COURSE (OR MODULE)

The course is divided in theoretical lessons, in-class practical lessons, practical exercises (individual and/or group activities and revisions).

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- ☐ Written
- ☑ Oral
- ☐ Project discussion
- ☑ Other : Discussion of graphic works

In case of a written exam, questions refer to

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

b) Evaluation pattern

COURSE DESCRIPTION
APPLICATIONS OF DESCRIPTIVE GEOMETRY

SSD: DISEGNO (ICAR/17)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2023/2024

COURSE DESCRIPTION

TEACHER: ANSALDI BARBARA
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5512 - LABORATORIO DI DISEGNO DELL'ARCHITETTURA
MODULE: 01512 - APPLICAZIONI DI GEOMETRIA DESCRITTIVA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 03 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 5

REQUIRED PRELIMINARY COURSES

None

PREREQUISITES

None

LEARNING GOALS

The aim of this course is to provide the **fundamentals** and the **scientific methods** of **Descriptive Geometry** and its **applications** in architecture while introducing the **basics of Computer-aided design (CAD)**. The lessons will focus on the study of **tools** and **techniques** aimed at representing architecture and allowing the figuration of space through **digital** and **graphic models**. Moreover, Descriptive Geometry will be analyzed in its **theoretical and scientific aspects**, as well as the **methodological-operational** ones, in order to provide the knowledge and tools to interpret and represent the built environment and to design the architectural project.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

By the end of the course, students should know:

1. The fundamentals of Projective Geometry.

2. The methods of Descriptive Geometry, especially Monge's Method of Orthogonal Projections, the method of Axonometric projection and the method of Perspective projection.

3. The geometric classification of surfaces as well as their genesis and main properties.

4. The main tools of traditional and digital representation.

Students should also be able to recognize the different shapes of architecture, their geometric peculiarities and to pick the most suitable methods of representation in order to adequately describe the analyzed configurations. In addition, students must prove they can understand the stereometric nature of space and use the methods of representation with critical thinking, scientific knowledge and graphic sensibility, in order to highlight the main features of an architectural space. Finally, students must know the founding principles of the geometric genesis and development of surfaces, while being able to apply them to control the creative process with the help of bidimensional and three-dimensional representation tools.

Applying knowledge and understanding

The acquired knowledge on projective methods and geometric configuration of architecture will allow students to control and prefigure designed spaces while achieving an effective and rigorous communication of the project. The same knowledge will allow them to critically interpret the existent architectures for the purpose of survey and representation. The tools of digital representation will allow students to understand, analyze and communicate the architectural space with effective and rigorous language.

COURSE CONTENT/SYLLABUS

Descriptive Geometry is a science which deals with the geometric figures of the space, transcribing their models in visual language. The discipline will be presented as a complement of the Drawing of Architecture and, therefore, the methods of representation will be introduced with a theoretical and practical approach, with the aim of guiding students in the visualization and reading of the different configurations of an architectural space, from paper to digital.

APPLICATIONS OF DESCRIPTIVE GEOMETRY

Projective geometry

•Overview and general information

•Main operations

•Projectivity and prospectivity

Homology

•The reference in space and on the plane

•Properties and graphic operations

•Special cases (analogy, homothety, translation)

•Flipping Homology

Axonometry

•Overview and general information

Orthogonal axonometry

•Definition and main features

Oblique axonometry

•The reference in space and on the plane

•Cavalier axonometry as the homologous transformation of orthogonal projections

Perspective

•Overview and general information

•The reference in space and on the plane

•The representation of fundmental geometric entities

•The flipping method

•Determination of perspective heights

•Perspective section

Vaults and surfaces

•Overview and general information

•Surfaces of revolution

•Ribbed surfaces

Genesis and representation of vaults

•Barrel vault

•Barrel vault with lunettes

•Cross vault

•Cloister vault

•Bohemian vault

Conic sections

•ellipse, parabola, hyperbola (definition and geometric genesis)

COMPUTER-AIDED DESIGN (CAD)

•Overview and general information

•Main principles and fundamentals of CAD: tools and methods

•Difference between vectorial-based and raster-based software; interaction between the two different categories.

The virtual working area

•Drawing settings and relationship with “analogic” drawing

•Digital representation main apps between bi-dimensionality and three-dimensionality.

The tools of digital drawing

•Standard primitives

•Object properties

•Software for bi-dimensional representation

•Print management

•Software for three-dimensional representation

READINGS/BIBLIOGRAPHY

Textbook

Gesuele A, Pagliano A., Verza A., *La geometria animata. Lezioni multimediali di geometria descrittiva*, Libreria Editrice Cafoscarina, 2018

Additional suggested books (optional)

Migliari, R., *Geometria Descrittiva. Metodi e Costruzioni. Volumi I e II*, Città Studi Edizioni, 2009

Docci M., Gaiani M., Maestri D., *Scienza del disegno,* Città Studi Edizioni, 2021

TEACHING METHODS OF THE COURSE (OR MODULE)

The course is divided in theoretical lessons, in-class practical lessons, practical exercises (individual and/or group activities and revisions).

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- ☐ Written
- ☑ Oral
- ☐ Project discussion
- ☑ Other : Discussion of graphic works

In case of a written exam, questions refer to

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

b) Evaluation pattern

COURSE DESCRIPTION
CALCULUS

SSD: ANALISI MATEMATICA (MAT/05)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: DI GENNARO ROBERTA
PHONE:
EMAIL: rdigenna@unina.it

GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5513 - CORSO INTEGRATO DI ISTITUZIONI DI MATEMATICHE
MODULE: 01270 - ANALISI MATEMATICA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 4

REQUIRED PRELIMINARY COURSES

None

PREREQUISITES

Adeguate possession of the mathematical skills provided in the curricula of previous secondary education paths including knowledge of the essential elements of formal language.

LEARNING GOALS

The objective of the course is to provide the student with the basic content of Mathematical Analysis essential
for proper learning of scientific-technical disciplines. The course of training is
proposes, specifically, to educate in mathematical logical reasoning with the rigorous language formal language typical of the discipline, as well as to provide broader tools of investigationand modeling that facilitate learning in general
and, in view of future professional choices, enable the application of acquired knowledge in

specific work contexts.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Knowledge and understanding
The student will have to acquire basic knowledge and skills of finalized Mathematical Analysis
to an easy learning of technical-scientific disciplines: Theory of structures, Technique
construction, technical physics, disciplines that contribute strongly to the creation of the figure
professional experience of the junior architect. In particular, at the end of the course, you will have to have acquired
tools and procedures of mathematical analysis with particular reference to the main theorems e
applications of differential calculus and integral theory for functions of one variable.

Applying knowledge and understanding

The student must be able to identify and consciously apply knowledge and procedures acquired in solving problems both in mathematics and in other contexts,
must be able to understand and know how to adequately express qualitative information
and quantitative, design and build simple mathematical models
-Judgement autonomy: The student must be able to evaluate
critically the problems posed and propose the most appropriate approach argue what is requested.
- Communication skills: The student must demonstrate logical ability deductive and synthetic in the exposition, must know how to use
the mathematical language correctly.
- Ability to learn: The student must be able to integrate
knowledge from various sources in order to achieve a broad vision of problems related to the topics covered.

COURSE CONTENT/SYLLABUS

Notes on set theory: Properties of sets and related operations.
Numerical sets:
N, Z, Q, R.

Elements of Topology on R: real intervals, neighborhood of a point, accumulation points for a
together and isolated points. Bounded sets: minimum and maximum, infimum and extremum
superior.
Functions: The concept of function. Classification of functions (injective, surjective, bijective).
Equipotent sets. Finite sets, infinite sets. Composite functions. Invertible functions.
Real functions of a real variable: Elementary functions: power function with exponent
integer and real, exponential and logarithmic functions. Circular functions and local inverses. Functions
monotonous. Composite functions.
Limits of functions: Definition of limit of a real function of a real variable: limit at a point of
R, limit to infinity. Uniqueness limit theorem (with proof). Function limits
elementary. Operations on limits. Indeterminate forms. Right limit and left limit. Infinitesimals and
infinite.
Continuous functions: Definitions and properties. Sign permanence theorem.(with dim) Theorem
of the existence of zeros (notes of the dim). Weierstrass theorem and intermediate values. Discontinuous functions in a
point: classification of discontinuities. Inverse functions of continuous functions.
Derivatives: Definition of derivative at a point. Geometric meaning of the derivative. Theorem
relating to the continuity of differentiable functions (dim.).
Derivatives of elementary functions. Operations
with derivatives. Derivatives of composite functions and inverse functions. Equation of
tangent at a point to the graph of a function.
Application of derivatives: Relative maxima and minima, Fermat's Theorem (with dim. and interpretation
geometric). Rolle's and Lagrange's theorems (with dimensions and geometric interpretation). Monotonicity criteria for
differentiable functions (graphical justifications). Convex and concave functions: convexity criterion.
Flexed. The de L'Hospital rule (not dim.). Study of the graph of a function.

Definite integrals: Area of the rectangle; integrability of continuous functions and definite integral
(definition and geometric interpretation). Properties of definite integrals. The mean theorem (with
demonstration).
Indefinite integrals: Integral function. Fundamental theorem of integral calculus (with dim.).
Primitives and characterization of the primitives of a function (with dim.). Fundamental report of
integral calculation (with dim.). Indefinite integrals. Integration methods.

READINGS/BIBLIOGRAPHY

Recommended texts
A. Ventre –Matematica Parte 1 –Ed. Liguori.
P. Marcellini –C. Sbordone: Esercitazioni di Matematica –I vol., parte I e II –Ed. Liguori.
P. Marcellini –C. Sbordone: Esercitazioni di Matematica –II vol., parte I –Ed. Liguori

TEACHING METHODS OF THE COURSE (OR MODULE)

This semester-long course is a module of the integrated course of Institutions of Mathematics which is structured as follows:
1. Mathematical Analysis (Mat/05 -4 CFU)
2. Geometry (MAT/03 -4CFU)
In the delivery of the course, theoretical lectures, accompanied by concrete examples, will be always perfectly complemented by the relevant application exercises,. Extensive use of graphical representations to give greater clarity to the concepts introduced and provide more effective tools for interpreting the proposed concepts.

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- [x] Written
- [x] Oral
- [ ] Project discussion
- [x] Other : fleeped classroom (not compulsery)

In case of a written exam, questions refer to

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

b) Evaluation pattern

Assessment will be on the basis of a written assignment made up of numerical and theoretical exercises. Passing the written paper, done even incompletely, is necessary to take the oral test. At the 'oral will start with discussion of the 'paper and then move to more theoretical concepts.
Some demonstrations as desired are required.
Students on a voluntary basis may choose to participate in flipped classroom activities throughout the year (explaining some agreed topics to colleagues). Participation in this activity is a rewarding element in assessment.

COURSE DESCRIPTION
GEOMETRY

SSD: GEOMETRIA (MAT/03)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: DI GENNARO ROBERTA
PHONE:
EMAIL: rdigenna@unina.it

GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5513 - CORSO INTEGRATO DI ISTITUZIONI DI MATEMATICHE
MODULE: 00107 - GEOMETRIA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 4

REQUIRED PRELIMINARY COURSES

None

PREREQUISITES

Adequate possession of the mathematical skills provided by the curricula of secondary education and knowledge of the essential elements of formal language.

LEARNING GOALS

The aim of the course is to provide the student with the basic contents of Mathematical Analysis that are essential for a correct learning of the technical-scientific disciplines. The training course aims, in particular, to educate to rigorous logical reasoning and the use of formal language, as well as to provide broader tools of investigation that facilitate learning in general and, in view of future career choices, enable the knowledge acquired to be applied in the relevant contexts.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The aim of this course is to learn analitic algebra and analitic geometry topics. A further aim is to apply these techniques in other scientific disciplines. Learning outcomes (declined compared with the Dublin descriptors)

-Knowledge and understanding: Knowledge of analitic algebra and analitic geometry topics. The student will be able to state and prove basic theorems.

Applying knowledge and understanding

Applying knowledge and understanding

-Ability to apply knowledge and understanding: The ability to understand the problems proposed during the course, the ability to correctly apply the theoretical knowledge. The student will be able to study of the graphs of elementary functions, to solve integration standard-Riferimenti ortonormali- Riferimento cartesiano ortogonale monometrico nel piano- Cambiamenti di riferimenti- Rappresentazione della retta nel piano- Coseni direttori di una retta orientata- Intersezione di due rette e condizioni di parallelismo- Ortogonalità tra rette-Distanza tra insiemi- Punto medio e asse di un segmento- (1CFU-8 ore)

-Riferimento cartesiano monometrico nello spazio- Cambiamenti di riferimenti- Prodotto vettoriale nello spazio dei vettori geometrici liberi Rappresentazione del pino- Parallelismo e ortogonalità tra piani Rappresentazione della retta nello spazio- Coseni direttori di una retta orientata- Fasci di piani- Parallelismo e ortogonalità tra rette Parallelismo e ortogonalità tra retta e piano- Punto medio di un segmento- Distanza tra insiemi nello spazio- (1CFU-8ore)-Esercizi relativi ad ogni argomento

Obiettivi Agenda 2030
per lo sviluppo
sostenibile

Obiettivi per lo sviluppo sostenibile

Codice Descrizione

problems of elementary character, to discuss the nature of numerical sequences and series.

-Making judgments: Develop the ability to critically evaluate the problems and propose the most appropriate approach.

-Communication skills: Ability to report and present the results with a logical-deductive and synthetic exposition-Ability to learn:Ability to develop outline, summarize the contents.

COURSE CONTENT/SYLLABUS

-Linear algebra Numerical vectors- Matrices- Linear systems- Vector spaces
on R Operations inside and outside a set- Subspaces- Subspaces
generated by systems of vectors- Linear dependence and independence-Systems
independent- Bases and dimension of a vector space- Changes of
reference- Matrices Determinant of a square matrix and its properties- Rank of
a matrix- Invertible matrices- Cramer's rule for solving
linear systems- Representation of subspaces of R^n by means of systems
linear- Linear applications- Definition and first properties- Core and Image of
Linear applications and their dimensions- Isomorphisms of vector spaces.
Matrices and linear applications-Endomorphisms and isomorphisms- Isomorphism coordinated.-
Analytic geometry in the plane and space Linear dependence in the
plane and in the space of free geometric vectors- Scalar product
-Orthonormal references- Cartesian orthogonal reference
monometric in the plane- Changes of references- Representation
of the line in the plane- Intersection
of two lines and conditions of parallelism- Orthogonality between lines-
-Monometric Cartesian reference in space- Changes of
references- Vector product in the space of geometric free vectors..
Plane representation- Parallelism and orthogonality between planes
Line representation in space--Exercises related to each topic

READINGS/BIBLIOGRAPHY

[1] P. Biondi , P.M. Lo Re -Appunti di Geometria- E.DI.

[2] Nicola Melone Introduzione ai metodi di algebra lineare-Cedam

TEACHING METHODS OF THE COURSE (OR MODULE)

This semester-long course is a module of the integrated course of Institutions of
Mathematics which is structured as follows:
1. Mathematical Analysis (Mat/05 -4 CFU)
2. Geometry (MAT/03 -4CFU)
In the delivery of the course, theoretical lectures, accompanied by concrete examples, will be always perfectly complemented by related application exercises to make the connection between theoretical concepts and practice exercises evident.

EXAMINATION/EVALUATION CRITERIA

a) Exam type

☑ Written

- [x] Oral
- [ ] Project discussion
- [x] Other : fleeped classroom (not compulsory)

In case of a written exam, questions refer to

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

b) Evaluation pattern

Assessment will be on the basis of a written assignment made up of numerical and theoretical exercises. Passing the written paper, done even incompletely, is necessary to take the oral test. At the 'oral will start with discussion of the 'paper and then move to more theoretical concepts.
Some demonstrations as desired are required.
Students on a voluntary basis may choose to participate in flipped classroom activities throughout the year (explaining some agreed topics to colleagues). Participation in this activity is a rewarding element in assessment.

COURSE DESCRIPTION
GEOMETRY

SSD: GEOMETRIA (MAT/03)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: ROTUNNO ALESSANDRA
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5513 - CORSO INTEGRATO DI ISTITUZIONI DI MATEMATICHE
MODULE: 00107 - GEOMETRIA
TEACHING LANGUAGE: ITALIANO
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 4

REQUIRED PRELIMINARY COURSES

None

PREREQUISITES

Adequate possession of the mathematical skills provided by the curricula of previous secondary education and knowledge of the essential elements of formal language

LEARNING GOALS

The aim of the course is to provide the student with the basic contents of Geometry that are essential for a correct learning of the technical-scientific disciplines. The training course aims, in particular, to educate to rigorous logical reasoning and the use of formal language, as well as to provide broader tools of investigation that facilitate learning in general and, in view of future career choices, enable the knowledge acquired to be applied in the relevant contexts.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The student will acquire basic knowledge and skills of Geometry aimed at an easy learning of the technical-scientific disciplines: Theory of structures, Construction technology, Technical physics, disciplines that contribute strongly to the creation of the professional figure of the junior architect. In particular, at the end of the course, will have acquired tools and procedures of Geometry with particular reference to the main theorems and applications of linear sistems , Projection geometry elements, Classification of the conics, Parametric equation of a straight line in a plane and in a space

Applying knowledge and understanding

Applied knowledge and understanding skills: The student must be able to correctly apply the theoretical knowledge acquired during the course. In particular, he/she must be able to solve linear algebra and analytic geometry exercises proposed during the course.

- Autonomy of judgment: The student must be able to critically evaluate the problems posed and propose the most appropriate approach to argue what is required.
- Communication skills: The student must demonstrate logical deductive and synthetic skills in exposition, must be able to use mathematical language correctly.
- Learning skills: The student must be able to integrate knowledge from various sources in order to achieve a broad view of the

problems related to the topics covered.

COURSE CONTENT/SYLLABUS

1. Vector spaces Structure of a vector space on a field . Building an Euclidean space Sn; base of a vector space Operations between carriers; scalar products Equations in a plane S3

2. Linear systems Definition of a linear system of m equations in n unknowns . Definition of a matrix, sub-matrix, determinant and minor Sum and products of a matrix Matrix of coefficients and complete matrix Rouche-Capelli Theorem Discussion of linear systems

3. Analytical geometry From Euclid's II postulate to the 1st degree equation Explicit line equation: angular coefficient and interception Equation of a straight line for two points and for one point with a given angular coefficient Equation of a straight line in homogeneous coordinates Parallelism and perpendicularity between straight lines Equation of a straight line in space Parametric equation of a straight line in a plane and in a space Parallelism and orthogonality between straight lines and planes Straight bands

4. Projection geometry elements Projection and section - perspective between lines: infinite point and improper point Prospect between planes: infinite straight line , improper straight line Representation of a straight line in a projective plane

5. Conics Space genesis and representation in the plane Conics in the Cartesian plane and projective plane Classification of the conics

READINGS/BIBLIOGRAPHY

Aldo G.S.Ventre, Matematica uno e Due, Fridericiana Editrice Universitaria, 2011
Course notes

TEACHING METHODS OF THE COURSE (OR MODULE)

The course is a module of the integrated course of Mathematics Institutions that is articulated as follows:

1. Mathematical Analysis (Mat/05 - 4 CFU)
2. Geometry (MAT/03 - 4CFU).

In the course, the theoretical lessons, accompanied by concrete examples and the related application exercises, are always perfectly integrated. Extensive use is made of graphic representations to give greater clarity to the concepts introduced and provide more effective tools for interpreting the proposed situations.

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- ☐ Written
- ☑ Oral
- ☐ Project discussion
- ☑ Other : An inter-course test will be administered to the students. The result of the test will not affect admission to the oral examination

In case of a written exam, questions refer to

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

b) Evaluation pattern

COURSE DESCRIPTION
HISTORY OF ARCHITECTURE 1

SSD: STORIA DELL'ARCHITETTURA (ICAR/18)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: CAPANO FRANCESCA
PHONE: 081-2538616
EMAIL: francesca.capano@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: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 8

REQUIRED PRELIMINARY COURSES

none.

PREREQUISITES

none.

LEARNING GOALS

The course aims to provide the critical and methodological tools for the knowledge of the history of western architecture and the European city during the modern age up to the early contemporary age, with reference to the main historiographical categories and the theories of architecture that have characterised the debate in modern Europe. Introducing the general aspects concerning the ancient and medieval age, the linguistic and theoretical phenomena, authors and works with reference to the European debate from the Renaissance to Neoclassicism will be dealt with. Historiographical analysis will be tackled at both the architectural and urban scales, using bibliographical and iconographical sources, in order to provide the student with the tools for the

knowledge of paradigmatic cases relating to periods and places.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The student must acquire the historical disciplines in an integrated manner with respect to the subjects of the course of study: the understanding of history must be considered with respect to the themes addressed in the courses of Architectural and urban design, Urban planning, and Restoration. The student will have to understand the main themes, exemplified through works and protagonists, in relation to the different historical moments and places; he/she will have to critically analyse the architectural work also through the study of the material, constructive and cultural peculiarities of each historical period. The student will thus have demonstrated a critical knowledge of architectural and urban phenomena in a diachronic dimension.

Applying knowledge and understanding

The student will have acquired a satisfactory mastery of the methods of historiographical analysis applied to architecture and the city, i.e. he/she will be able to use the methodological tools of the discipline in order to recognise the linguistic and stylistic aspects relating to architecture at the scale of the artefact and the territory and to understand the relationship between theory and design. The student will be able to understand the relationships between Architectural history and the other disciplines learnt in the Drawing, Architectural and urban design, Restoration, Urban planning courses.

COURSE CONTENT/SYLLABUS

INTRODUCTIONS. The meaning of Classicism; outlines of the History of Architecture between the Classical World and the Middle Ages; Greek Architecture from the origins to the Hellenistic Period: the city, architectural orders, typologies; Roman Architecture and Vitruvius; the permanence of the Ancient between Late Antiquity and the Middle Ages and Romanesque; elements of Gothic Architecture.

RENAISSANCE. Between the Proto-Renaissance and the Renaissance in Tuscany; Filippo Brunelleschi; Vitruvianism and Leon Battista Alberti's theory; the 15th-century Florentine palace; the 15th-century city: the ideal city and urban transformations; the Renaissance in Milan; the early 16th century in Rome.

MANIERISM. The sixteenth-century Roman palace; the building site for the new San Pietro in Rome; Raffaello the architect and his pupils: Baldassarre Peruzzi and Giulio Romano; Michelangelo; The Counter-Reformation; The treatisers; 'Venetian Classicism'; Andrea Palladio.

THE BAROQUE AND THE ROCOCÒ. Sisto V and Domenico Fontana's plan; The Roman Baroque: Pietro da Cortona, Gian Lorenzo Bernini; Francesco Borromini; Guarino Guarini; 'Baroque Classicism' in France; the theme of the place royale; Claude Perrault's eastern front of the Louvre; the residence of Vaux-le Vicomte, the palace of Versailles; Palladianism: Inigo Jones, Christopher Wren; the Austrian Rococo; Fischer von Erlach; Lukas von Hildebrandt; Balthasar Neumann; Filippo Juvarra; Bernardo Vittone: 18th century Roman architecture.

NEOCLASSICISM IN THE 18TH CENTURY. Theories; architecture, antiques and collecting; Giuseppe Piermarini; the theoretical debate in France; Etienne-Loius Boullée; Claude Nicolas Ledoux.
NAPLES: CITY AND ARCHITECTURE: The origins of the city: Parthenope and Neapolis; Angevin Naples; Aragonese Naples; Naples during the viceroyal period; Naples and the Bourbons; the French Decade.

READINGS/BIBLIOGRAPHY

The student may choose one of the following textbooks for the general part: Renato De Fusco, Mille anni d'architettura in Europa, Roma-Bari, Laterza, 1993. David John Watkin, Storia dell'architettura occidentale, Bologna, Zanichelli 1990. For the monographic part on Naples a selection will be provided from the following volumes: G. Alisio, Urbanistica napoletana del Settecento, Bari, Dedalo, 1979. A. Bonanni, Napoli angioina, in Conoscere Napoli: storia e itinerari, edited by D. Bartolucci, Naples, Liguori, 1990. A. Buccaro, G. Matacena, Architettura e urbanistica dell'età borbonica. Le opere dello stato, i luoghi dell'industria, Napoli, Electa Napoli, 2004. R. De Fusco, L'architettura del Quattrocento, Turin, UTET, 1984. D. Del Pesco, Napoli: l'architettura, in Storia dell'architettura italiana. Il secondo Cinquecento, edited by C. Conforti, R.J. Tuttle, Milan, Electa, 2001. C. de Seta, Napoli, Roma-Bari, Laterza, 1981. A. Ghisetti Giavarina, Napoli, in Storia dell'architettura italiana. Il primo Cinquecento, edited by A. Bruschi, Milan, Electa, 2002. R. Pane, Architettura e urbanistica del Rinascimento, in Storia di Napoli, Napoli, Edizioni Scientifiche Italiane, vol. IV, t. I; A. Venditti, Urbanistica e architettura angioina, in Storia di Napoli, Napoli, Edizioni Scientifiche Italiane, III, 1969; E. Violini, Napoli dalle origini al secolo XIII, in Conoscere Napoli..., cit. Students will be provided with all the lectures in the course in pdf format for the iconographic material necessary for understanding the topics covered. Supplementary material will be provided for the lessons that will take place in and around Naples.

TEACHING METHODS OF THE COURSE (OR MODULE)

The student may choose one of the following textbooks for the general part: Renato De Fusco, Mille anni d'architettura in Europa, Roma-Bari, Laterza, 1993. David John Watkin, Storia dell'architettura occidentale, Bologna, Zanichelli 1990. For the monographic part on Naples a selection will be provided from the following volumes: G. Alisio, Urbanistica napoletana del Settecento, Bari, Dedalo, 1979. A. Bonanni, Napoli angioina, in Conoscere Napoli: storia e itinerari, edited by D. Bartolucci, Naples, Liguori, 1990. A. Buccaro, G. Matacena, Architettura e urbanistica dell'età borbonica. Le opere dello stato, i luoghi dell'industria, Napoli, Electa Napoli, 2004. R. De Fusco, L'architettura del Quattrocento, Turin, UTET, 1984. D. Del Pesco, Napoli: l'architettura, in Storia dell'architettura italiana. Il secondo Cinquecento, edited by C. Conforti, R.J. Tuttle, Milan, Electa, 2001. C. de Seta, Napoli, Roma-Bari, Laterza, 1981. A. Ghisetti Giavarina, Napoli, in Storia dell'architettura italiana. Il primo Cinquecento, edited by A. Bruschi, Milan, Electa, 2002. R. Pane, Architettura e urbanistica del Rinascimento, in Storia di Napoli, Napoli, Edizioni Scientifiche Italiane, vol. IV, t. I; A. Venditti, Urbanistica e architettura angioina, in Storia di Napoli, Napoli, Edizioni Scientifiche Italiane, III, 1969; E. Violini, Napoli dalle origini al secolo XIII, in Conoscere Napoli..., cit. Students will be provided with all the lectures in the course in pdf format for the iconographic material necessary for understanding the topics covered. Supplementary

material will be provided for the lessons that will take place in and around Naples.

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

not applicable.

COURSE DESCRIPTION
THEORY AND TECHNIQUE OF ARCHITEXCTURAL PROJECT

SSD: COMPOSIZIONE ARCHITETTONICA E URBANA (ICAR/14)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: ORFEO CAMILLO
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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: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 6

REQUIRED PRELIMINARY COURSES

There is no propaedeutic teaching.

PREREQUISITES

There are no prerequisites.

LEARNING GOALS

The course intends to initiate students to the understanding of architectural practice starting from a thematic reading that transversely crosses the main theoretical positions that exist alternate in the history of architecture.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The course aims to introduce students to an understanding of the making of architecture starting from a thematic reading that transversally traverse the main theoretical positions that have taken

place in the history of architecture.

Applying knowledge and understanding

The evaluation will take into account the student's growth pathway in the conscious acquisition of knowledge, skills and skills with respect to the transitions between the levels that articulate the course. The examination will consist of an interview phase focused on verifying the knowledge acquired on the theoretical aspects of architecture and in a discussion phase on the exercises carried out during the course.

COURSE CONTENT/SYLLABUS

The course intends to introduce students to the understanding of architectural practice starting from thematic readings capable of transversally covering the main theoretical positions that have taken place in the history of architecture. The theoretical aspect will be related to the technical components of the design process: compositional, constructive and distribution through the reading of works of the masters of architecture in relation to their theoretical writings. In this way, the course aims to encourage critical reflection in students on the ways in which architecture is conceived, programmed, built and used and to introduce them to the use of a critical method useful for questioning, choosing and constructing design themes focused on on the character of architecture, or rather on its ability to build space around man and to relate that same space to its purpose: its ability to be inhabited. The synthesis between the knowledge, acquired through the discussion of the theoretical positions and the skills acquired through the reading of the technical components, will contribute to the construction of a profile of skills that will equip the student with the basic tools useful for governing the design process.

READINGS/BIBLIOGRAPHY

A. Campo Baeza, *Principia architectonica*, C. Marinotti Edizioni, Milano 2018.
Le Corbusier, *Verso una architettura*, Longanesi, Milano 1999.
C. Martí Arís, *Le variazioni dell'identità. Il tipo in architettura*, Ed. CLUP, Milano, 1990.
C. Martí Arís, *La cèntina e l'arco. Pensiero, teoria, progetto in architettura*, C. Marinotti Edizioni, Milano, 2007.
L. Mies ven der Rohe, *Gli scritti e le parole*, Einaudi, Giulio Einaudi Editore, Torino, 2010.
A. Monestiroli, *La metopa e il triglifo*, Laterza, Roma-Bari, 2002.
A. Loos, *Parole nel vuoto*, Adelphi, Milano 1992.
F. Purini, *Comporre l'architettura*, Laterza, Roma-Bari, 2000.
A. Rossi, *L'architettura della città*, Il Saggiatore, Milano, 2018.
A. Rossi, *Introduzione a E.L. Boullée*, Architettura. Saggio sull'arte, Einaudi, Torino 2005.
A. Rossi, *Architettura per i Musei*, in AA. VV., Teoria della progettazione architettonica, Dedalo, Bari 1968.

TEACHING METHODS OF THE COURSE (OR MODULE)

The course will be structured through seminars, lessons and exercises, within the framework of the debate on the theories, techniques and poetics of architecture, in order to accompany students

in the construction of a critical horizon useful for understanding architectural practice and the foundations necessary to govern the design process. The course will be structured through study and exercises on the main theoretical positions that have emerged in the history of architecture, with a particular focus on some masters of modern architecture and a cycle of exercises on the compositional principles that govern space. The theoretical contents will be transferred to the students as bases/tracks on which to articulate the proposed exercises useful for understanding and deepening the topics covered. The frontal lessons and in-depth seminars can also be delivered through multimedia support and with the aid of online materials. The classroom exercises will take place through the use of suitable instruments for the drafting of documents and/or models.

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
- [x] Open answers
- [ ] Numerical exercises

b) Evaluation pattern

The Commission evaluates the awareness achieved by the student through a written test with multiple/open answers, with an oral interview and by viewing the papers produced during the exercises.

COURSE DESCRIPTION
THEORY AND TECHNIQUE OF ARCHITEXCTURAL PROJECT

SSD: COMPOSIZIONE ARCHITETTONICA E URBANA (ICAR/14)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: GIORDANO LORENZO
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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: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 6

REQUIRED PRELIMINARY COURSES

There are no required preliminary courses

PREREQUISITES

There are no prerequisites

LEARNING GOALS

The course in Theory and Technique of Architectural Design aims to provide students with the knowledge and operational bases that allow them to learn and develop a critical and conscious attitude towards the architectural design process. A path that requires a logical and intelligible approach based on the study of theories, aesthetics and principles capable of substantiating the architectural project through the identification of those basic elements capable, as a whole, or through their mutual assembly, of satisfying the primary needs of living. An assembly, or rather a composition, understood as a set of techniques that set themselves a formal objective to be identified in the development of an architectural model on a small dimensional scale. It is

interesting, from this perspective, to note that within the dialogues between Socrates and Phaedrus imagined by Paul Valéry in his *Eupalinos ou l'Architecte*, a passage emerges that connects the idea of the word and the figure to compositional logic: “[F] But why do you need words? And why so few? [S] This, dear Phaedrus, is more important: no geometry without the word. Without it, figures are accidents and do not manifest or serve the power of the spirit [...]” and that, thanks to the word, “[...] every figure is a proposition that can be composed with others”. The course is based, conceptually, on the questions that emerge from the intense dialogue between the two Platonic characters reinvented by Paul Valéry and in that awareness for which architecture is not only a question of form, or figure, but also and above all of word, therefore of thought and theory. “Since architecture is made of an ordered set of figures and given that no figure exists without the word, it follows that there can be no work of architecture without the word to name it”. This statement by George Teyssot clarifies the relationship between those essential elements of architecture, understood as ectypes - substructure, platform, pier, wall, opening, staircase and roof - and, on the other hand, the archetypal concepts to which they refer - the idea of excavation, support, division, transition, connection and protection. Elements and needs specified by a strong sense of collective value that are inserted into a program of terminological analysis capable of becoming a solid cultural basis on which to build one’s knowledge, towards the construction of a design thought of a synthetic but not simplistic, essential and not elementary nature.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The student must demonstrate that he/she has acquired the basic notions explained during the course, both within the sphere of theoretical, historical and critical concepts, as well as fundamental technical tools to define the architectural project. Starting from these bases, he/she must be able to specify his/her own critical thinking capable of adapting to the different needs required in the field of architectural design. Starting from the theoretical and practical tools acquired, the student must demonstrate that he/she is able to apply, in a critical manner, the methodological knowledge acquired, oriented towards their application in defining the architectural project.

Applying knowledge and understanding

Starting from the theoretical and practical tools acquired, the student will have to demonstrate that he is able to apply, in a critical manner, the methodological knowledge acquired, oriented towards their application in defining the architectural project.

COURSE CONTENT/SYLLABUS

The course aims to provide the student with specific basic knowledge related to the field of architectural design, specified within a program that starting from a series of fundamental principles will address theories and concepts capable of giving the student a critical awareness related to the architectural project. Each lesson will address a specific architectural term interpreted according to a theoretical-practical dichotomy, orienting the student within a condition of knowledge and critical awareness.

READINGS/BIBLIOGRAPHY

1. Agamben, G. (2008). Che cos'e il contemporaneo?. Milano: Editore Nottetempo.
2. Bachelard, G. (2006). La poetica dello spazio. Bari: Edizioni Dedalo.
3. Breitschmid, M., Olgiati, V. (2018). Non-Referential Architecture. Basilea: Simonett &Baer.
4. Calvino, I. (1988). Lezioni Americane. Sei proposte per il prossimo millennio. Milano:Garzanti.
5. Campo Baeza, A. (2018). Principia architectonica. Milano: Christian Marinotti Edizioni.
6. Forty, A. (2000). Parole e edifici. Un vocabolario per l'architettura moderna. Bologna: Pendragon.
7. Grassi, G. (a cura di) (1998). Tessenow, H. Osservazioni elementari sul costruire. Milano: Franco Angeli.
1. Le Curbusier (Charles-Edouard Jeanneret), (1973). Verso una architettura. Milano: Loganesi &C.
2. Marti' Aris, C. (1990). Le variazioni dell'identita. Torino: Citta Studi Edizioni.
3. Norberg-Schulz, C. (1979). Genius Loci. Paesaggio Ambiente Architettura. Milano: Electa.
4. Pedretti, B. (a cura di), (2016). L'atlante dell'architetto. Mendrisio: Silvana Editoriale
5. Quaroni, L. (1977). Progettare un edificio. Otto lezioni di architettura.Milano: Mazzotta.
6. Rossi, A. (1966). L'architettura della citta. Milano: Clup.
7. Rykwert, J. (1972). La casa di Adamo in Paradiso. Milano: Adelphi.
8. Vidler, A. (2012). Storie dell'immediato presente. Rovereto: Zandonai.

TEACHING METHODS OF THE COURSE (OR MODULE)

The course of Theory and Technique of Architectural Design will be held for about 70% of the hours available by lectures, where the themes highlighted in the Program-syllabus will be specified. During the lectures there will be a moment of discussion in relation to the specific theme covered, with the aim of specifying a critical involvement of the student. Seminars with external guests will also be organized, focused on specific themes related to the theoretical and practical issues of the architectural project.

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 learning assessment will be carried out through an oral interview aimed at verifying the specific skills learned by the student during the course and their ability to critically interpret the themes of architectural design.

COURSE DESCRIPTION
THEORY AND TECHNIQUE OF ARCHITEXCTURAL PROJECT

SSD: COMPOSIZIONE ARCHITETTONICA E URBANA (ICAR/14)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 03 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER I
CFU: 6

REQUIRED PRELIMINARY COURSES

There is no propaedeutic teaching

PREREQUISITES

There are no prerequisites.

LEARNING GOALS

The course aims to introduce students to an understanding of the making of architecture starting from a thematic reading that transversally traverse the main theoretical positions that have taken place in the history of architecture.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The evaluation will take into account the student's growth pathway in the conscious acquisition of knowledge, skills and skills with respect to the transitions between the levels that articulate the

course. The examination will consist of an interview phase focused on verifying the knowledge acquired on the theoretical aspects of architecture and in a discussion phase on the exercises carried out during the course.

Applying knowledge and understanding

The student develops the ability to theoretically and methodologically organize design activity and to create projects with different degrees of complexity in relation to the different scales of architectural design. The student also develops the ability to apply economic and evaluative knowledge to the design activity, in its various articulations, confronting the different degrees of complexity and the different fields of application of architectural design and urban design.

COURSE CONTENT/SYLLABUS

The course aims to introduce students to an understanding of the making of architecture starting from a thematic reading that transversally traverse the main theoretical positions that have taken place in the history of architecture. The theoretical aspect theoretical aspect will be related to the technical components of the design process, both compositional and constructive and distributive, through the reading of works by masters of architecture, read in relation to their theoretical writings. In this this way, the course aims to encourage students to critically reflect on the ways in which architecture is conceived, planned, constructed and used and to introduce them to the use of a critical method useful for questioning, choosing and constructing design themes centred on the character of architecture, i.e. its capacity to build space around man and to relate man and to relate that same space to its purpose: its ability to be inhabited. The synthesis between knowledge, acquired through the treatment of theoretical positions, and skills, acquired through the reading of the technical components of the design process, will contribute to the construction of a profile of skills that will equip the student with the basic tools useful for governing the design process. This third phase of the course will be developed through a cycle of exercises on the compositional principles governing space. In the meantime, design issues will be addressed, working with students to learn a strategy of representation useful for overcoming the gap between graphic abstraction and the real physical construction of architecture.

READINGS/BIBLIOGRAPHY

Bibliografy

Vitruvio, *De Architectura,* BUR Biblioteca Univ. Rizzoli, Milano 2002.
L. B. Alberti, *De Re Aedificatoria*, Bollati Boringhieri, Torino 2010.
M. A. Laugier, *Essai sue l'architecture*, Aesthetica, Palermo 2002.
G. Semper, *Lo stile nelle arti tecniche e tettoniche. Estetica pratica*, Laterza, Bari 1992.
Le Corbusier, *Verso una architettura*, Longanesi, Milano 1999.
A. Loos, *Parole nel vuoto*, Adelphi, Milano 1992.
M. Bonaiti (a cura di), *Architettura è. Luis Isidoro Khan*. Gli scritti, Electa, Milano 2001.
R. Koolhas, *Delirious New York*, Electa, Milano 2001.
P. Eisenman, *The formal basis of Modern architecture*, Lars Müller Publishers, Zurigo 2006.

S. Holl, *Parallax. Architettura e percezione*, Postmedia Books, Milano 2005.
Additional bibliographical references related to the topics covered or supplementary teaching materials will be provided by the lecturer at the beginning of the course.

TEACHING METHODS OF THE COURSE (OR MODULE)

The course will be developed in seminars, lectures and exercises, within the framework of the debate on the theories, techniques and theories, techniques and poetics of architecture, so as to accompany students in the construction of a critical horizon useful for the understanding of the making of architecture and the foundations necessary to govern the design process.
level 1 - study and exercises on the main theoretical positions that have taken place in the history of architecture.
level 2 - study and exercises conducted through the reading of works by the masters of architecture, read in relation to their theoretical writings.
level 3 - cycle of exercises on the compositional principles governing space.
Each level will correspond to cycles of lessons, the theoretical contents of which will be transferred to the students as a basis/track on which to articulate exercises useful for understanding and deepening the topics covered.
Theoretical lessons The lessons will be divided into cycles useful for the development of the levels into which the course is divided. The following is the sequence of the cycles.
Theories of architecture: from antiquity to the Renaissance.
Theories of architecture: from the 17th century to the Industrial Revolution.
Theories of architecture: Moderns.
Theories of architecture: Post-Moderns.
Theories of architecture: Contemporaries.

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
- [x] Open answers
- [ ] Numerical exercises

b) Evaluation pattern

The exam will be conducted orally and will focus on deepening the student's knowledge of the topics covered in the course and discussing the papers produced.

COURSE DESCRIPTION
TECHNOLOGICAL CULTURE FOR HABITAT DESIGN

SSD: TECNOLOGIA DELL'ARCHITETTURA (ICAR/12)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: TERSIGNI ENZA
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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: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

REQUIRED PRELIMINARY COURSES

Not foreseen

PREREQUISITES

No prerequisites

LEARNING GOALS

The course has the key objective of transmitting the fundamentals of the discipline of Architectural Technology, through the awareness of the synergic nature of the different components of an Architectural Building, in relation to the project, both in its conceptual and operational phases. The disciplinary contents delivered through lectures and exercises will therefore be aimed at providing the basis for a design and technical culture through information and training of the student, as well as to make the latter competent in the management of the process - programmatic and executive - that underlies the construction of an architectural artefact.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Through lectures, seminars, active meetings and exercises the student interprets and understands the technological and material issues related in particular to the construction and executive aspects of the architectural project also in relation to the use of methodologies and strategies for environmental sustainability and the protection of the natural and cultural heritage and considers their intertwining with the other disciplines that contribute to architectural and environmental design.

Applying knowledge and understanding

The student develops the ability to interpret and subsequently begin to define in detail, in both theoretical and applicative terms, the technological and constructional aspects of architecture, both in the knowledge and design phases.

COURSE CONTENT/SYLLABUS

The course content explores different aspects of the design-construction process through general and specific topics.

General topics

- technological design;
- from the design idea to the construction of a building;
- the principles of sustainable architecture;
- the role of technology in the development of the architectural project;
- the requirements-performance approach for the quality of projects.

Specific topics

- the building as a system;
- construction systems;
- the production processes of building materials and components.

READINGS/BIBLIOGRAPHY

Basic texts

- E. Arbizzani, Progettazione tecnologica dei sistemi edilizi. Progetto, processo, costruzione, Maggioli Editore, Sant'Arcangelo di Romagna, 2021.
- A. Campioli, M. Lavagna, Tecniche e architettura, Città studi edizioni, Milano, 2013.
- M. Torricelli, R. Del Nord, P. Felli, Materiali e Tecnologie dell'Architettura, Laterza, Roma, 2005.

Recommended bibliography

- AA.VV., Progettazione tecnologica, TECHNE n.2, Firenze University Press, 2011 (http://www.fupress.net/index.php/techne/issue/view/785).
- N. Sinopoli, V. Tatano, Sulle tracce dell'innovazione, Franco Angeli, Milano, 2002.
- M. Losasso, Architettura, tecnologia e complessità, Clean, Napoli, 1991.
- E. Dassori, R. Morbiducci, Costruire l'Architettura. Tecniche e tecnologie per il progetto, Tecniche nuove, 2010.

- AAVV, Manuale di progettazione edilizia, Hoepli, 1995.
- M. Salvadori, R. Heller, Le strutture in architettura, Etaslibri, Milano, 1992.
- AA.VV., Manuale di progettazione edilizia, Hoepli, Milano, 2007 (Volumi: 1, 4 e quaderni: le strutture, le chiusure verticali, le chiusure orizzontali, le partizioni, le finiture).

TEACHING METHODS OF THE COURSE (OR MODULE)

The course is divided into theoretical lectures and graphic exercises aimed at verifying the basic knowledge acquired by the students and assessing their application skills.
The main topics covered in the theoretical lectures are:
- The Architecture Technology.
- Sustainable development and the construction world.
- Systemic logic and building system.
- Structures in architecture: foundation structures, elevation structures, floors.
- Closures: perimeter walls, flat and sloping roofs, external fixtures.
- Partitions: walls, internal fixtures, stairs.
- Hints on plants.
- The building process.
- The demand/performance approach.
- Construction materials and systems.
- Methods of representation of the architectural project: the executive detail.

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- [ ] Written
- [x] Oral
- [ ] Project discussion
- [x] Other : Graphic Exercises

In case of a written exam, questions refer to

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

b) Evaluation pattern

COURSE DESCRIPTION
TECHNOLOGICAL CULTURE FOR HABITAT DESIGN

SSD: TECNOLOGIA DELL'ARCHITETTURA (ICAR/12)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: DELL'ACQUA FEDERICA
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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: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

REQUIRED PRELIMINARY COURSES

There are no required preliminary courses

PREREQUISITES

There are no prerequisites

LEARNING GOALS

The course aims to provide knowledge, methodologies and tools of Technological and Environmental Design of Architecture aimed at the design of the habitat, both in the conceptual and operational phases. The disciplinary contents, delivered through frontal lessons and practical exercises, are aimed at making the student competent in the management of the process - programmatic and executive - that underlies the construction of the building.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Through lectures and exercises the student understands and interprets the construction aspects of buildings and building materials, with particular reference to methodologies and strategies for environmental protection, sustainability and reduction of environmental impacts, considering the interactions with other disciplines that contribute to the project.

Applying knowledge and understanding

The student develops the ability to identify, interpret and define, overall with respect to the building system and subsequently on a detailed scale, both in conceptual terms and through application exercises, the technological and constructional aspects of the building.

COURSE CONTENT/SYLLABUS

The course conveys the basic knowledge related to the design process and the construction aspects underlying the realization of the building, framing them on the one hand in the culture of technological and environmental design, and on the other hand in relation to the goals of sustainable development, the reduction of environmental impacts and the role of the building sector in the objectives of reducing climate-changing emissions.

The course programme envisages three areas of content, framing, basic and specific, as outlined below.

Thematic framework:

- fundamentals of technological and environmental design for the habitat
- built environment and Carbon and Climate Neutral scenarios
- principles of sustainable architecture

Basic topics:

- the building as a system
- the building construction process
- the requirements-performance approach for the quality of the project

Specific topics:

- materials and construction systems
- graphic representation of executive details

READINGS/BIBLIOGRAPHY

Core texts

- Arbizzani, E. (2021), *Progettazione tecnologica dei sistemi edilizi. Progetto, processo, costruzione,* Maggioli Editore, Sant'Arcangelo di Romagna.
- Campioli A., Lavagna M. (2013),*Tecniche e architettura*, Città studi edizioni, Milano.
- Torricelli M., Del Nord RFelli., P. (2005), *Materiali e Tecnologie dell'Architettura*, Laterza, Roma.

Further Bibliography

- Attaianese E., Losasso M. (2022) "La Progettazione ambientale e la ricerca di Area Tecnologica per il progetto di architettura", in Attaianese E., Losasso M., (a cura di) *La ricerca nella Progettazione ambientale. Gli anni 1970-2008. I contributi dalle Sedi universitarie del Cluster Progettazione ambientale della Società Italiana della Tecnologia dell'Architettura*, Maggioli,

Santarcagelo di Romagna, pp. 9-14.
- AA.VV. (1995), *Manuale di progettazione edilizia*, Hoepli.
- AA.VV. (2007), *Manuale di progettazione edilizia*, Hoepli, Milano, (Vol.: 1, 4 e Quaderni: le strutture, le chiusure verticali, le chiusure orizzontali, le partizioni, le finiture).
- M. Losasso, *Architettura, tecnologia e complessità*, Clean, Napoli, 1991.
- Vittoria, E. (1975), “Abitabilità del territorio” in *Argomenti per un corso in Tecnologia dell’architettura*, Multigrafica Brunetti, Roma.
- Gangemi V. (1995), “Sistemi eco-compatibili nella Progettazione Ambientale” in AA. VV., *TIA - Teaching in Architecture energy and environment world network*, Alinea Editrice, Firenze.
- Nardi G. (2001), *Tecnologie dell’architettura. Teorie e storia*, Libreria CLUP, Milano.
- Maldonado T. (1970), *La speranza progettuale,* Einaudi, Torino.
- Spadolini P. (1981), “Progettare nel processo edilizio”, in Zaffagnini M. (a cura di) *Progettare nel processo edilizio. La realtà come scenario per l’edilizia residenziale*, Edizioni Luigi Parma, Bologna.

TEACHING METHODS OF THE COURSE (OR MODULE)

The course is organized into lectures and exercises, carried out through the production of graphic details aimed at verifying the student's level of learning of the theoretical contents and the ability to apply them.
The contents of the theoretical lessons are divided into:
- Elements of the technological culture of design. The concept of habitat and the built environment
- The built environment in the new climate regime. Sustainable design solutions for counteract the effects of climate change in the urban context
- Technical policies for Climate and Carbon Neutrality in the urban and built environment
- The building construction process
- The requirements-performance approach to architectural design
- The systemic approach for reading and design the building
- Structures in architecture: foundation structures, elevation structures, floors.
- Enclosure systems: perimeter walls, flat and sloping roofs, external fixtures.
- Partitions: walls, internal fixtures, stairs
- Building systems and construction materials
- Basics of plants aspects
- Methods of graphical representation of the project. Construction details

EXAMINATION/EVALUATION CRITERIA

a) Exam type

- ☐ Written
- ☑ Oral
- ☐ Project discussion

☑ Other : Graphic drawings

In case of a written exam, questions refer to

☐ Multiple choice answers

☐ Open answers

☐ Numerical exercises

b) Evaluation pattern

The examination involves testing the learning of the theoretical content and assessing the application skills as a result of the exercise activity

COURSE DESCRIPTION
TECHNOLOGICAL CULTURE FOR HABITAT DESIGN

SSD: TECNOLOGIA DELL'ARCHITETTURA (ICAR/12)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: BIANCO ANITA
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: NOT APPLICABLE
MODULE: NOT APPLICABLE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 03 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

REQUIRED PRELIMINARY COURSES

Not provided

PREREQUISITES

There are no prerequisites

LEARNING GOALS

-

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

-

Applying knowledge and understanding

-

COURSE CONTENT/SYLLABUS

-

READINGS/BIBLIOGRAPHY

-

TEACHING METHODS OF THE COURSE (OR MODULE)

-

EXAMINATION/EVALUATION CRITERIA

a) Exam type

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

In case of a written exam, questions refer to

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

b) Evaluation pattern

-

COURSE DESCRIPTION
BASIC URBAN PLANNING

SSD: URBANISTICA (ICAR/21)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

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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: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

REQUIRED PRELIMINARY COURSES

No

PREREQUISITES

No

LEARNING GOALS

The course aims to provide students with the basic tools to understand and manage territorial development by studying the evolution of urban settlement forms and models. By outlining the approaches, plans, and projects that have shaped socio-spatial transformations over the past two centuries, key themes and figures in contemporary urban planning debates are explored in depth to develop a critical and projective vision of the places we inhabit and will inhabit.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Students build a background of critical knowledge that is instrumental to understanding –through references, documentation and collective discussions –the origins and evolutions of urban planning up to today. Through the study of theories and models of spatial planning and with a focus on the contribution and influence of the fathers of urban planning on the contemporary age, students analyze the theories, debates, techniques and innovative aspects in the frames of interpretation, planning and design of the city, territory and landscape.

Applying knowledge and understanding

Students develop analytical and critical reading skills regarding the different approaches to the themes of the territory and its transformation with the conceptualization of its models and principles. By gaining this knowledge, students are able to identify the parts, elements, structures and relational systems that define urban, peri-urban and rural landscapes. Students can recognize distinctive characteristics of territories both in relation to the built components and the morphology of the open space.

COURSE CONTENT/SYLLABUS

The course consists of lessons, exercises and collective discussions aiming at two parallel purposes: the first is about a theoretical learning based on the roots of the discipline, its evolution in terms of theories, models and plans, also in relation to the challenges of the contemporary urban planning; the second focuses on approaching the direct knowledge of the Neapolitan territory that represents an exploratory field in which to apply those theoretical notions as tools for a critical reading and interpretation of parts of the city.

The program has four parts:

I. INTRODUCTION TO URBAN PLANNING

The first part introduces urban planning as both knowledge and practice by illustrating the diversity of topics the discipline encompasses and understanding its multifaceted and evolving nature in relation to changes in economic, social, and environmental conditions –from its origins to the present day. In contrast to the attempts to provide a single definition, the course critically examines the positions of various experts in response to the question: "What are we talking about when we talk about urban planning?". Additionally, it addresses the changes brought about by the Industrial Revolution, the role of the urban planner, and contemporary approaches to the study, representation, and planning of cities.

II. THEORIES AND MODELS OF SPATIAL PLANNING

The second part conceptualizes urban planning through spatial planning theories and models of the last two centuries in Europe. The study of the fathers of urban planning, with their work and thoughts, is treated in connection with contemporary perspectives to understand themes and issues of today's city. Some of the themes explored are the phenomenology of urban expansion with the transformation of capital cities at the end of the XIX century; Cerdà's theory of spatial equality and the Superblocks of contemporary Barcelona; the spatial development theory and regional investigation with the figure of Geddes and the role of civic engagement in contemporary planning; Howard's Garden City as a model of spatial equilibrium and the peri-urban landscape in

contemporary urban planning; the machine-city of the Modern Movement, the urban planning of CIAM and the zoning as a legacy of this model; the city and the natural environment from Abercrombie's Greater London Plan to its influences on the plan towards the definition of urban circularity principles.

III. TOOLS AND THEMES OF URBAN PLANNING IN ITALY

The third part frames the instrument of the Plan in the national context since post-war Italy and in relation to the leading figures who have contributed to the evolution of methods and approaches of the discipline.

IV. THE DESIGN OF THE URBAN PLAN AND THE "NEW URBAN QUESTION"

The fourth part focuses on the contemporary urban project starting from the characteristics and criticalities of the territories. It explores how, with the emergence of a “new urban question", which orients the transition of urban systems towards principles of sustainability, equity and inclusion, the methods and techniques of urban planning take adaptiveness, process dynamics, and openness to uncertainty as characteristics that are potential for the project.

READINGS/BIBLIOGRAPHY

The reference text is:

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

Other texts:

Secchi B. (2000). *Prima lezione di urbanistica*. Editori Laterza, Roma.

Secchi B. (2005). *La città del ventesimo secolo.* Editori Laterza, Roma

Tosi M.C. (2017). *Di cosa parliamo quando parliamo di urbanistica?.* Meltemi, Milano.

During the course, a selection of essays, articles, and excerpts will be provided to integrate the lessons and the main text.

TEACHING METHODS OF THE COURSE (OR MODULE)

The lessons include moments of one-to-all speech and collective discussions on emerging topics. At the end of each of the four parts, exercises and collective discussions will be carried out in class. The lessons will use images and reference texts that will be provided to students.

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 course has midterm exercises to track the correct transfer of the program contents.
The final evaluation will take into account the oral test that aims at verifying the understanding of the fundamental notions, the ability to make pertinent connections between the topics and the issues posed by the contemporary world, and the skills acquired by reading the territory chosen as a case study.

COURSE DESCRIPTION
BASIC URBAN PLANNING

SSD: URBANISTICA (ICAR/21)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

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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: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

REQUIRED PRELIMINARY COURSES

Nothing

PREREQUISITES

Nothing

LEARNING GOALS

The course aims at introducing the students to the control of the development of the urban territory and focuses on the evolution of the forms and models of urban settlements through an excursus based on the last two centuries. The chronological narrative unfolds key themes and figures of contemporary urban planning by identifying a perspective that is open to the design of the spaces of the contemporary city.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Students build a background of critical knowledge that is instrumental to understanding –through references, documentation and collective discussions –the origins and evolutions of urban planning up to today. Through the study of theories and models of spatial planning and with a focus on the contribution and influence of the fathers of urban planning on the contemporary age, students analyze the theories, debates, techniques and innovative aspects in the frames of interpretation, planning and design of the city, territory and landscape.

Applying knowledge and understanding

Students develop analytical and critical reading skills regarding the different approaches to the themes of the territory and its transformation with the conceptualization of its models and principles. By gaining this knowledge, students are able to identify the parts, elements, structures and relational systems that define urban, peri-urban and rural landscapes. Students can recognize distinctive characteristics of territories both in relation to the built components and the morphology of the open space.

COURSE CONTENT/SYLLABUS

The program includes the following topics

Part One: from modern to contemporary urban planning (general theories, tools and 2 **methods)** - The birth of modern urbanism: the industrial revolution and the city, The Utopias and the modern city, the post-liberal city. - The construction of the modern city: Paris (Haussman), Barcelona (Cerdà), Amsterdam (Van Eesteren) - The Contemporary City: The paradigm of sustainability and Urban Regeneration

Part Two: The evolution of the Piano form in Italy (theories, tools and methods) - From recovery plans to general land use plan - The planning "model" in Italy: types and purposes of plans. - From the General Town Plan to the Town Urban Plan;

Part Three: The construction of the Municipal Urban Plan (tools, methods, techniques, elaborations) - Zoning, urban standards; - Urban Indices and Parameters; - The sizing of the plan - The study of the territory and the city: The cognitive framework for the drafting of the P.U.C. - The study of the territory and the city: investigations on the natural and urban landscape in the formation of the plan - The forms of implementation of the Urban Plan: The Urban Implementation Plans - The forms of implementation of the Urban Plan: Urban equalization - The project documents: The preliminary plan, the structural plan, the operational plan - The project documents: The general report, the technical implementation standards, the urban building regulations - The evaluation for the PUC: The Strategic Environmental Assessment (SEA)

Thematic Seminars - The contemporary city: case studies: New Urbanism in the USA - The contemporary city: urban regeneration in Europe from the 80s to today - The P.U.C. in Campania, case studies: The PUC of the Municipality of Moiano (BN);

The exercise Students will have to prepare papers for the formation of the cognitive framework of an urban sector of the city of Naples. The exercise can be carried out both individually and in groups.

READINGS/BIBLIOGRAPHY

The teaching material made available to students consists of:
- Handout edited by the course owner who in a discursive way on the contents of the individual lessons and seminars (Teams channel of the Course);
- Slides of the individual lessons/seminars held (Teams channel of the Course);
- Bibliographical references with the basic texts of deepening (reported in the handout and in the lessons)

TEACHING METHODS OF THE COURSE (OR MODULE)

The course is divided into:
lectures (60%), aimed at illustrating to students the theories and methods of urban planning technique,
thematic seminars (10%), held by the teacher and / or experts of the discipline to deepen the concrete application of theories and methods through the illustration of case studies
exercises (30%), with which students will be required to test the application of the techniques learned during the course

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 evaluation of learning will consist of an individual interview on the topics addressed in the lessons / seminars contained in the handout edited by the teacher, and in the basic in-depth texts, and on the elaborations produced.

COURSE DESCRIPTION
ARCHITECTURAL AND URBAN COMPOSITION

SSD: COMPOSIZIONE ARCHITETTONICA E URBANA (ICAR/14)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: PICONE ADELINA
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5515 - LABORATORIO DI FONDAMENTI DEL PROGETTO DI ARCHITETTURA
MODULE: U2384 - COMPOSIZIONE ARCHITETTONICA E URBANA
TEACHING LANGUAGE:
CHANNEL: 01 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

REQUIRED PRELIMINARY COURSES

Not foreseen

PREREQUISITES

There are no prerequisites

LEARNING GOALS

The aim of the course is to introduce the first year student to the architectural design. The ARCHITECTURAL and URBAN COMPOSITION as characterizing discipline and the MECHANICS AND STRUCTURE MODELING module (which provides knowledge of basic mechanics and modeling), applying them to the design exercise of the lab, contribute to the achievement of this objective.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Theoretical lessons, seminars, site visits and the activities of the Design Studio are the instruments with which the student knows the compositive principles (distributive, typological, morphological and related to the architectural language) on which the architectural project is based toghether with its different thematic articulations, understanding the relationship with the other disciplines that are part of the construction of the architectural design.Through lectures and exercises, the student also knows the issues related to the structural conception and calculation as integrated elements of the design development in the different areas of its application, understanding the relationship with the other disciplines that are part of the construction of the architectural design.

Applying knowledge and understanding

The student develops, theoretically and methodologically, the capability of structuring the design activity and producing design drawings comparing the different degrees of complexity of the architectural project at different scales. The capability to apply the acquired knowledge in this area is concretized in the laboratory planning activities over the years.The student develops, theoretically and methodologically, the capability of applying the knowledge related to the structural aspects of the architectural design and to produce design documents. With reference to the structural conception, the student develops the capaability to critically choose materials, typologies and dimensions of a first calculation to be assigned to the structural system and its elements.

COURSE CONTENT/SYLLABUS

ARCHITECTURAL DESIGN 1 A

THROUGH ARCHITECTURES

A.OBJECTIVES

The course aims to introduce the student to an experimentation through all the phases of which the design process in architecture is composed. Aiming at the decodification of the procedures and praxis of the constructing form process, the course will lead to an initial design experience: an exercise on the patio house, conducted as part of the "Incipit Lab" first-year design workshops, coordinated by the University of Palermo.

B.CONTENTS

The architectural project is understood as the result of a logical path during which a series of choices are rationally made, ordered by a theory. A corpus of theoretical lectures will deepen the thematic aspects, delving into the articulation of the multiple knowledges of which the project is made up: from the relationship with history, to the relationship with the context, investigated in the double form of nature and urban dimension, to the relationship with the typology, to the relationship with the regulations, to the form-function relationship, to the relationships with the technological and plant engineering aspects, up to the technical-structural dimension of the project, seen in particular in relation with the formal conception. The acquisition of elementary

notions (analytical-instrumental field) is proposed to the student mainly through the reading of reference architectures. The architectures are placed at the centre of the cognitive pathway, it is, in fact, through the works that the techniques are exposed, the theories found and the methodologies made explicit. In this way, questions pertaining to the methodological-theoretical field will be explored at the same time as those of the analytical-instrumental sphere, as on the other hand happens in project practice.

C. ARTICULATION
The course is divided into theoretical lectures and project activities to be carried out in the classroom. The theoretical lessons will address two orders of topics: the techniques of making, with the support of manuals, and the composition of form in relation with interdisciplinary aspects. The design activity will be conducted in the form of exercises on the theme of housing. The first exercise will consist of a thematic reading of Terragni's Danteum, using the redesign and construction of a model as the main tools. The reading will tend to trace the 'hidden structure' in relation to the configuration and quality of the spaces, proportions and measurements. The second exercise will focus on the house of Pompeii. By redrawing the plan and section of the Domus, the Vitruvian canons will be applied to discover the proportions of the rooms and represent them in interpretative models. The third exercise will focus on the reading of a contemporary patio house, assigned to the students by the lecturer, a reading that will take the form of drawings and a study model. From the comparison between the Domus and the contemporary patio house the compositional principles of the final exercise will be drawn. The exercise involves the drafting of all the graphic works necessary to describe the house: floor plan, plans at various heights, elevations and sections, three-dimensional representation and model. The exercises are individual, drawing exclusively by hand during the entire Design Studio's path.

READINGS/BIBLIOGRAPHY

The theoretical lectures and design exercises will be illustrated, commented and documented by means of specific teaching and bibliographical materials. Particularly relevant will be the consultation of monographic texts on the work of the Masters. The architectures of the Masters will constitute the main bibliographical reference, like a text, of the course.

TEACHING METHODS OF THE COURSE (OR MODULE)

Lectures and exercises. Architectural Design Studio project activities.

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 Architectural Design Studio 1, foresees a single test for the two integrated disciplines. The final grade will be weighted according to the CFUs of each course and will be composed as follows: MECHANICS AND STRUCTURAL MODELLING Module 4CFU 40%, ARCHITECTURAL DESIGN Module 6CFU 60%.

COURSE DESCRIPTION
ARCHITECTURAL AND URBAN COMPOSITION

SSD: COMPOSIZIONE ARCHITETTONICA E URBANA (ICAR/14)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: VISCONTI FEDERICA
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5515 - LABORATORIO DI FONDAMENTI DEL PROGETTO DI ARCHITETTURA
MODULE: U2384 - COMPOSIZIONE ARCHITETTONICA E URBANA
TEACHING LANGUAGE:
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

REQUIRED PRELIMINARY COURSES

"Teoria e tecnica della progettazione architettonica" (Theory and Tecnique of architectural design).

PREREQUISITES

There are no prerequisites.

LEARNING GOALS

The aim of the course is to introduce the first year student to the architectural design. The ARCHITECTURAL and URBAN COMPOSITION as characterizing discipline and the MECHANICS AND STRUCTURE MODELING module (which provides knowledge of basic mechanics and modeling), applying them to the design exercise of the lab, contribute to the achievement of this objective.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Theoretical lessons, seminars, site visits and the activities of the Design Studio are the instruments with which the student knows the compositive principles (distributive, typological, morphological and related to the architectural language) on which the architectural project is based toghether with its different thematic articulations, understanding the relationship with the other disciplines that are part of the construction of the architectural design.

Applying knowledge and understanding

The student develops, theoretically and methodologically, the capability of structuring the design activity and producing design drawings comparing the different degrees of complexity of the architectural project at different scales. The capability to apply the acquired knowledge in this area is concretized in the laboratory planning activities over the years.

COURSE CONTENT/SYLLABUS

The Design Studio is based on the application of a 'method' that starts from the reflection on the theme, goes through the typological choice as project choice, reflects on the project-context and project-construction relationship, in order to arrive at the definition of the expressive character of the architectural form.
The work in the Design Studio is organized in two distinct phases: the first concerns the elaboration of the year's theme also passing through the critical redesign of selected references. The second concerns the deeper work on the relationship architecture-construction and, also in a collective form, on the relationship between architecture and context.
A limited number of theoretical lessons will be held in parallel with the phases in which the Design Studio work is articulated in order to make clear to the students the link existing in Architecture between Theory and Praxis. The lessons, therefore, will be on the following general topics: the project as an 'ordered system of choices'; the theme in architecture; the typological choice; the relationship between architecture and context; the relationship between forms of construction and forms of architecture; modalities of architectural composition.

READINGS/BIBLIOGRAPHY

BIBLIOGRAPHY

1. A. Rossi, *Architettura per i Musei*, in AA. VV., *Teoria della progettazione architettonica*, Dedalo, Bari 1968.
2. A. Rossi, *Introduzione* a E-L. Boullée, *Architettura. Saggio sull'arte*, Einaudi, Torino 2005.
3. *Dizionario critico illustrato delle voci più utili all'architetto moderno*, a cura di Luciano Semerani, Edizione C.E.L.I., Faenza 1993 (Voci: Tipo di C. Martí Arís, Costruzione di A.R. Burelli, Carattere di E. Mantese).
4. A. Monestiroli, *La metopa e il triglifo,* Laterza, Roma-Bari, 2002.

5. F. Visconti, *Esercizi di analogia*, Thymos Books, Napoli 2022.

TEACHING METHODS OF THE COURSE (OR MODULE)

Lectures and exercises. Studio design 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

40% Meccanica e modellazione delle strutture (Mechanics and Structure Modeling)
60% Composizione architettonica e urbana (Urban and Architectural Composition)

COURSE DESCRIPTION
ARCHITECTURAL AND URBAN COMPOSITION

SSD: COMPOSIZIONE ARCHITETTONICA E URBANA (ICAR/14)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: CASALBORDINO FRANCESCO
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5515 - LABORATORIO DI FONDAMENTI DEL PROGETTO DI ARCHITETTURA
MODULE: U2384 - COMPOSIZIONE ARCHITETTONICA E URBANA
TEACHING LANGUAGE:
CHANNEL: 03 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 6

REQUIRED PRELIMINARY COURSES

Teoria e tecnica della progettazione architettonica (Theory and Tecnique of architectural design).

PREREQUISITES

There are no prerequisites.

LEARNING GOALS

The aim of the workshop is to introduce first-year students to architectural design. Achieving this goal involves both **ARCHITECTURAL AND URBAN COMPOSITION** as the core discipline and the **MECHANICS AND STRUCTURAL MODELLING** module, which provides basic knowledge of mechanics and modelling, applying them to the design exercises within the workshop.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Through theoretical lessons, seminars, site visits, and laboratory activities, the student will become familiar with the compositional issues (distributive, typological, morphological, and linguistic) that form the basis of architectural design and its various thematic aspects, understanding their relationships with other disciplines that contribute to the formation of the architectural project. Through lectures and in-class exercises, the student will also learn about issues related to the design and calculation of structures as integral elements of architectural project development in its various fields of application, understanding their relationships with other disciplines that contribute to the formation of the architectural project.

Applying knowledge and understanding

The student develops the ability to theoretically and methodologically structure the design process and produce design proposals while addressing the various levels of complexity in architectural projects at different scales. The ability to apply some of the knowledge acquired in this area is realized through the design activities in the Laboratory across the different years. The student also develops the ability to apply theoretical and methodological knowledge related to the structural aspects of architectural design and the ability to produce design documents. With regard to structural design, the student develops the ability to critically choose materials, typologies, and preliminary dimensions (pre-sizing) to be assigned to the structural system and its components.

COURSE CONTENT/SYLLABUS

1. OBJECTIVES

The course introduces first-year students to the fundamentals of architectural design, providing essential knowledge and tools for approaching a project. The main goal is to help students understand how compositional and construction choices are closely interconnected in defining the architectural form. In the first phase, the course focuses on analyzing key works of Modern Architecture, with the objective of developing a method to understand the processes that guide the construction of form. Subsequently, students will have the opportunity to apply this understanding in an initial design experiment: an exercise dedicated to domestic living.

2. CONTENTS

The course presents architectural design as a process based on intentional choices made by the designer, aimed at defining the architectural form and placed in tension between two key aspects: on one hand, the designer's will for form and measure; on the other hand, the force of gravity dictated by natural laws. These choices develop within a field of action defined by the relationship between theme, place, type, and tectonics. The interaction between these elements determines the structure of the architectural form: the place, in relation to the theme, guides the choice of the architectural type, while the tectonics define its character and language, making construction possible. The course aims to help students acquire the fundamental notions of this dynamic through the study of four reference architectures related to the theme of the design exercise, each exemplifying a specific typology and construction technique:

•Muuratsalo Experimental House, Alvar Aalto (1952) –continuous walls;

•Villa Savoye, Le Corbusier (1928) –concrete frame;
•Eames House, Charles and Ray Eames (1949) –steel frame;
•Fisher House, Louis Kahn (1960) –mixed wall-frame structure.
The study of these works takes place through both theoretical lessons and practical exercises conducted by the students. The architectures form the core of the knowledge journey: through them, the techniques are illustrated, theories are traced, and design methodologies are explicitly presented, with particular reference to the theme of the design exercise.
The analysis of the works and the design method identified lead to the design exercise: the design of a house for a fisherman on the shores of Lake Fusaro, in Bacoli. This exercise guides students in designing a small building in a real context, characterized by both natural and anthropic elements, allowing them to apply and verify the knowledge acquired through the study of reference architectures.
All phases of study, analysis, and the development of the design exercise must be enriched by personal research conducted by the student, aligned with their interests and areas of design experimentation. In this context, students are called to play an active role within the Laboratory, contributing to collective reflection in a dialogical and interactive dimension.

3. STRUCTURE

The course develops through theoretical lessons, practical exercises on the four case studies, and design experimentation activities. In addition to the classroom activities, field study moments will complement the experience, with site visits and excursions to significant places and works to deepen the issues covered in the course and support the development of the design exercise. The educational path is divided into three main phases: the first two dedicated to the analysis of the case studies, and the third to the development of the project. Each phase includes specific exercises, carried out through the construction of physical models at different scales using various materials, and freehand drawing.

Phase I –MEASURE

•Site/Type
•Geometries and Hierarchies
•Spatial Articulation
•Situations

Phase II –GRAVITY

•Act of Verification
•Structure/Character

Phase III –DESIGN EXERCISE The final exercise involves preparing all the graphic materials necessary to describe the house: plan, sectional views, elevations, 3D representations, and physical model.

Complementary Activities:

In addition to the three main phases, the course includes other integrative activities.
•Introduction to the course;
•Exercise of Measure I –Freehand redrawing of significant architectures in Naples to develop the ability to capture the complexity of the architectural object;

•Site visit to the Roman Villas of Stabiae;
•Site visit to the intervention area.

READINGS/BIBLIOGRAPHY

Theoretical lessons and design exercises will be supported by specific teaching materials and bibliographic references, which will be illustrated and commented upon during the course. Special emphasis will be placed on consulting texts dedicated to the four works selected as case studies, which will constitute the main bibliographic reference. The provided materials serve as a starting point: students are expected to independently deepen their study of the works, developing personal research aligned with their own interests and areas of design experimentation.
All students will be required to provide a **carnet de voyage** to collect all the material related to their personal journey throughout the months of the Laboratory (sketches, photographs, project drawings, notes, etc.).

Recommended Bibliography:

•Calvino I., *Le cosmicomiche*, Mondadori, 1993.
•Casalbordino F., *The Terrestrial Domesticity of Adamo-Faiden*, Cratèra, Naples 2022.
•Giardiello P., Santangelo M., *Panorami abitabili*, LetteraVentidue, 2017.
•Le Corbusier, *Precisions. On the present state of architecture and city planning*, Park Books, 2015.
•Norberg-Schulz C., *Genius Loci. Paesaggio Ambiente Architettura* (1979), Italian edition, Electa, Milan 2016.
•Norberg-Schulz C., *Architettura: presenza, linguaggio e luogo*, Skira, Milan 1996.
•Reed P. (ed.), *Alvar Aalto 1898-1976*, Electa, 1998.
•Von Meiss P., *Dalla Forma al Luogo. Un'introduzione allo studio dell'Architettura*, Hoepli, Milan 1992.

TEACHING METHODS OF THE COURSE (OR MODULE)

The course is structured as a Laboratory, alternating theoretical lessons on specific topics with practical activities in the classroom. Throughout the course, there will be moments of individual and collective discussions to monitor progress and address any challenges. Additionally, field visits will enrich the educational experience.
The exercises are individual, and throughout the course, students will be required to work with hand drawing.
The use of physical models and study prototypes will be central to the design process, serving as the main tool for verifying and developing ideas. Intermediate reviews will provide opportunities for discussion and in-depth analysis, allowing students to engage with the instructor and with each other on the challenges faced and the progress made.

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 Laboratory includes a single exam for the two integrated subjects. The final grade will be weighted according to the ECTS credits (CFU) of each course, as follows: Mechanics and Structural Modeling Module, 4 ECTS, 40%; Architectural Design Module, 6 ECTS, 60%.

COURSE DESCRIPTION
MECHANICS AND MODELING OF STRUCTURES

SSD: SCIENZA DELLE COSTRUZIONI (ICAR/08)

DEGREE PROGRAMME: SCIENZE DELL'ARCHITETTURA (D05)
ACADEMIC YEAR 2024/2025

COURSE DESCRIPTION

TEACHER: BABILIO ENRICO
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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: U5515 - LABORATORIO DI FONDAMENTI DEL PROGETTO DI ARCHITETTURA
MODULE: U5516 - MECCANICA E MODELLAZIONE DELLE STRUTTURE
TEACHING LANGUAGE: ITALIANO
CHANNEL: 02 Cognome A - Z
YEAR OF THE DEGREE PROGRAMME: I
PERIOD IN WHICH THE COURSE IS DELIVERED: SEMESTER II
CFU: 4

REQUIRED PRELIMINARY COURSES

Teoria e tecnica della progettazione architettonica

PREREQUISITES

There are no prerequisites.

LEARNING GOALS

The aim of the course is to introduce the first year student to the architectural design. The ARCHITECTURAL and URBAN COMPOSITION as characterizing discipline and the MECHANICS AND STRUCTURE MODELING module (which provides knowledge of basic mechanics and modeling), applying them to the design exercise of the lab, contribute to the achievement of this objective.
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EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

Theoretical lessons, seminars, site visits and the activities of the Design Studio are the instruments with which the student knows the compositive principles (distributive, typological, morphological and related to the architectural language) on which the architectural project is based toghether with its different thematic articulations, understanding the relationship with the other disciplines that are part of the construction of the architectural design.
Through lectures and exercises, the student also knows the issues related to the structural conception and calculation as integrated elements of the design development in the different areas of its application, understanding the relationship with the other disciplines that are part of the construction of the architectural design.

Applying knowledge and understanding

The student develops, theoretically and methodologically, the capability of structuring the design activity and producing design drawings comparing the different degrees of complexity of the architectural project at different scales. The capability to apply the acquired knowledge in this area is concretized in the laboratory planning activities over the years.
The student develops, theoretically and methodologically, the capability of applying the knowledge related to the structural aspects of the architectural design and to produce design documents. With reference to the structural conception, the student develops the capaability to critically choose materials, typologies and dimensions of a first calculation to be assigned to the structural system and its elements.

COURSE CONTENT/SYLLABUS

Vector theory

1. Scalar and vector quantities
2. Vector algebra
3. Scalar product, vector product, and mixed product
4. Vector basis

Kinematics of rigid bodies

1. Material point. Absolute and relative displacement.
2. Rigid material system
3. Infinitesimal displacements of a rigid body
4. Superposition of effects
5. Independent parameters of an infinitesimal rigid motion
6. Constraints and restraints
7. Beams and mechanical systems
8. Congruence

9. Distortions
10. Graphical solutions

Statics of rigid bodies

1. Laws of Mechanics
2. Equilibrium of a material point and a rigid body
3. The static behavior of constraints
4. Equations of equilibrium
5. Stress characteristics
6. Relationships between load, shear, and moment
7. Graphical solution of equilibrium

Virtual Works Theorem

1. The theorem of Virtual Works
2. Uses of the Virtual Works theorem.

READINGS/BIBLIOGRAPHY

A. Anselmi, Appunti di Statica, reperibile presso la copisteria Luda di Cirelli D. (SAS) in Via Sant'Anna dei Lombardi, 14 80134, Napoli;
A. Anselmi, Appunti di Teoria delle Strutture, Luda;
C. Ceraldi, L. Dodaro, M. Lippiello, Meccanica dei sistemi rigidi, Aracne editrice;
C. Ceraldi, L. Dodaro, M. Lippiello, Esercizi di Meccanica dei sistemi rigidi, Luda

TEACHING METHODS OF THE COURSE (OR MODULE)

The course is taught with lectures that cover all topics included in the syllabus, from both theoretical and applied perspectives. Students may ask for further clarification during the office hours.

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
- [x] Numerical exercises

b) Evaluation pattern

40% Meccanica e modellazione delle strutture

60% Composizione architettonica e urbana