

## MEDITERRANEAN UNIVERSITY OF REGGIO CALABRIA

<b>Subject Code</b>	<b>1000365</b>
<b>Subject Name</b>	Laboratorio di Rappresentazione - Applicazioni di geometria descrittiva e Disegno
<b>Professor</b>	Prof. Franco Prampolini
<b>Department:</b>	Patrimonio, Architettura e Urbanistica (PAU)
<b>Degree course:</b>	Scienze dell'Architettura
<b>Class:</b>	L 17
<b>Type of educational activity:</b>	Attività formative di base ( <i>Basic learning activities</i> )
<b>Disciplinary Area:</b>	Disegno e Rappresentazione ( <i>Drawing and Representation</i> )
<b>Scientific-Disciplinary Sector:</b>	ICAR/17 – Disegno ( <i>Drawing</i> )
<b>Compulsory preliminary exams:</b>	-
<b>Course Year:</b>	First
<b>Semester:</b>	First
<b>ECTS:</b>	4
<b>Hours:</b>	40

### Synthetic description:

The first module of the Representation Laboratory aims, after an introduction to the concepts of drawing and representation, to deal with the knowledge of the fundamentals and principles of descriptive geometry, being indispensable to master those foundational concepts that underlie each application of drawing, from the computerized one to surveying restitution.

Particular importance will be attached to the mastery of formal systems of notation, definitions, postulates, etc., of course, not as a mere mnemonic exercise, but as foundations descriptors of the construction process in the act of drawing itself, in the belief that the system formal control constitutes, indeed, a large part of the in-depth knowledge of the subject. Student must reach the capacity of making fundamental customisation of the operating environment, performing the basic operation with the user interface and settle the drawing structure for the final expected results.

### Acquisition of knowledge on:

Course Content - First half

#### 1. Introduction:

The drawing as a language, "natural drawing" and the world as an image.

#### 1.1. Exercise. Three freehand drawings:

- A part of themselves (a hand, a foot, face, ...),
- A still life (any subject),
- A detail of an architectural component (a capital, a molding, a technological element, ...)

A4 format, free technique.

#### 2. Descriptive Geometry - Fundamentals

##### 2.1. Basic geometric entities: Point - Line - Plane.

##### 2.2. Reference systems. Cartesian and Mongian space . Coordinated plans.

### 2.3. Projections and Sections

#### 3. Methods of elementary geometric construction.

##### 3.1. Tutorial: building simple figures both freehand in CAD environment.

#### 4. Descriptive Geometry - Operations

##### 4.1. Representation of Points, Lines and plans and combinations thereof.

##### 4.2. Terms of belonging, parallelism and squareness.

##### 4.3. Representation in "double projection" of complex figures.

##### 4.4. Exercise: representation in double orthogonal projection of combinations of graphics primitives (points, lines, planes).

#### 5. The "natural" three-dimensional representation.

##### 5.1. Perspective and Axonometric: Historical background, overview and definitions.

##### 5.2. Perspective: operating methods.

The course, then, is not tailored to be "an introduction" for the use of a particular software (e.g. AutoCAD), but students are gradually expected to go into the fundamentals of software, useful to the realization of the projects requested by the connected Laboratory of representation.

### **Student's independent work**

In an independent way the student will be engaged in the deepening of the different topics, practicing on required applications.

### **Evaluation method:**

The exam will be based on the critical evaluation of the final papers arranged with the teacher, consisting of the survey of a monument and the "drawn story" of the same with mixed techniques chosen by the student. It will also be necessary to prepare an original presentation (PowerPoint) about one of the theoretical topics of the course. At the end of the first semester a "self-assessment" test will be performed for the descriptive geometry program, with the chance to repeat it during the final examination.

### **Resources and main references:**

Basic reference \*\*

Docci Mario, Migliari Riccardo, Scienza della rappresentazione. Fondamenti e applicazioni della geometria descrittiva, Carocci editore, Roma, 1999.

Bonfigli - Braggio, Geometria Descrittiva e Prospettiva, Milano, Hoepli, 1987

Capone Mara, Prospettiva e Misura, Napoli, Arte Tipografica Ed., 2005.

Panowsky Erwin., La prospettiva come forma simbolica, Feltrinelli, Milano, 1961.

\*\*Contact your teacher for operating explanations.