UNIVERSITÀ DEGLI STUDI DI PALERMO

SCHOOL	POLYTECHNIC SCHOOL
ACADEMIC YEAR	2016/2017
FIRST CYCLE COURSE	CIVIL AND BUIDING ENGINEERING
SUBJECT	DRAWING
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50277-Ingegneria civile
CODE	02600
SCIENTIFIC SECTOR(S)	ICAR/17
HEAD PROFESSOR(S)	INZERILLO LAURA Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	9
INDIVIDUAL STUDY (Hrs)	144
COURSE ACTIVITY (Hrs)	81
PROPAEDEUTICAL SUBJECTS	
YEAR	1
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**INZERILLO LAURA** Monday 12:00 13:00 Dipartimento Darch, primo piano

TEACHING METHODS	lessons, exercises and life drawings in situ
ASSESSMENT METHODS	The candidate must be delivered a drawing work of a civil engineering infrastructure. The drawing work will be evaluated on the basis of four key criteria: accuracy, completeness, text organization in terms of linguistic exposure and shape, depth. The assessment of such processed contribute to the final evaluation, which will be' made on the basis of an oral examination by a score up to 30. The candidate must answer at least three questions that cover the entire syllabus. The pivotal criteria of the oral exam are: knowledge and mastery of subject content; enforcement capacity and conceptual rigor; expressive and explaining capacity, multidisciplinary connection and original reworking
LEARNING OUTCOMES	Knowledge and understanding Acquisition of knowledge and methods to address and resolve original manner their problems of the operational phases of representation of the yards for the construction of civil works, such as roads and railways, as well as the hydraulic works. To develop the skills in order to address the themes of the course by following an approach which focuses both on the graphic communication of the processes and the need for efficiency of decision-making criteria employed. Applying knowledge and understanding Acquisition of knowledge and methodologies to identify and put in place the solutions, technical and strategic requirements relating to the proper execution of civil works, in terms of graphic aspects Autonomy of judgment Acquisition of analysis methods, both in the technical sphere of embodiment, both of the decision-making methods for the executive programming, in the choice of the right executive technique of representation. According to this view, it is able to autonomously analyze any problem concerning the topics of the course and deal with a good baggage of skills, the result of the examination of case studies and research, made during course. Communication skills Development of specific communication skills consisting of written and verbal discussion, with adequate properties of language, of issues such as: the project of working infrastructures; the with particular reference to the features of the different techniques of representation with particular reference to the goal of the design; the technical rule aspects of the representation in the national, European and international field. Learning ability Ability to update and investigation through consultation of its scientific journals. Using the knowledge base acquired during the course, for conscious participation in design team, training courses, professional workshop and seminars
EDUCATIONAL OBJECTIVES	Objective of the course is to provide and train the technical skills of the engineer aimed at the professional activities such as a role in government, in the managing bodies of civil infrastructure, and especially in the construction business. The approach to the study of various topics hinges on case histories and research and professional experience of the teacher, accompanied by discussion on theories whose study is preparatory to applications which will be held during the course. The course therefore aims to provide the learner of the fundamental and strong theoretical background on the topics addressed not separate from knowledge of a broad application view.
PREREQUISITES	geometry and liner algebra concepts
SUGGESTED BIBLIOGRAPHY	• L. Inzerillo, Assonometria e futuro, aracne editrice • L. Inzerillo, Essere prospettici, aracne editrice • V. Capitano, disegno delle forme geometriche elementari

SYLLABUS

Hrs	Frontal teaching
1	elementary geometry, homology, perspective, assonometry
10	Monge projection. Representation of: point, straight line, plane. Particular points, straight lines, planes. Points on a straight line, stright lines on a plane. straight lines and plane that are parallel. Concept of the infinite in the space. Overlapping of a plane. Real form and real dimension of a polygonal figure. Meaning of the homology. Representation of a conic curve on a generic plane and on particular planes.
7	Monge projection: solid representation. Concept of generating straight line and direct curve. Pyramid, regural prism. Pyramid on a genric plane and on particular plane. Prism on a genric plane and on particular plane. Regular and oblique pyramid, regular and oblique prism. Representation of superior order conics. Cylinder and Cone. representation of cone and cilynder on oblique and generic planes either particular planes. representation of the sphere. Point on a Sphere , tangent plane to the sphere. Tangent sphere to a plane.

SYLLABUS

Hrs	Frontal teaching
7	Monge projection: intersection between plane and pyramide, plane and cone, plane and cilynder, plane and sphere. Intersection between straight line and pyramid, intersection between straight line and prism, intersection between straight line and cone, intersection between straight line and cilynder, straight line and sphere.
7	Monge projection: intersection between solids. intersections between cilynder with the same either different ray. Intersection between cone and cylinder, cylinder and sphere. Representation of quadric curves: bull, hyperbolic paraboloid, parabolic paraboloid. Architectonic elements: caracol, vault, cylinder vault.
7	grapho-mumerical projection: representation of a point, straight line, plane. particular point, straight lines, plans. Point on a straight line, straight line on a plane. Parallellism. Overlapping of a plane. real form and dimension of a plane figure. homology. Representation of a conic in a generic and a particular plane. Representation of the solid volumes. Pyramid and prism on a generic and particular plane. Regular and oblique pyramid and prism. Cylinder and cone horizontal or on a generic and oblique plane. Sphere. Intersection between solid volumes and plane and between themselves. Intersection between straight line and plane and pyramide and cone and cylinder and sphere
7	Orthogonal and oblique assonometry. Representation of: point, straight line, plane. Particular points, straight lines, planes. Points on a straight line, stright lines on a plane. straight lines and plane that are parallel. Concept of the infinite in the space. Overlapping of a plane. Real form and real dimension of a polygonal figure. Meaning of the homology. Representation of a conic curve on a generic plane and on particular planes. Concept of generating straight line and direct curve. Pyramid, regural prism. Pyramid on a genric plane and on particular plane. Prism on a genric plane and on particular plane. Regular and oblique pyramid, regular and oblique prism. Representation of superior order conics. Cylinder and Cone. representation of cone and cilynder on oblique and generic planes either particular planes. representation of the sphere. Point on a Sphere , tangent plane to the sphere. Tangent sphere to a plane. intersection between plane and pyramide, plane and cone, plane and cilynder, plane and sphere. Intersection between straight line and pyramid, intersection between straight line and prism, intersection between straight line and cone, intersection between straight line and cilynder, straight line and sphere. intersection between solids. intersections between cilynder with the same either different ray. Intersection between cone and cylinder, cylinder and sphere. Representation of quadric curves: bull, hyperbolic paraboloid, parabolic paraboloid. Architectonic elements: caracol, vault, cylinder vault.
2	Perspective: basic knowledge.

Hrs	Practice
36	exercises on the fundamental concepts about the different representation techiniques