UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Ingegneria
ACADEMIC YEAR	2021/2022
BACHELOR'S DEGREE (BSC)	MANAGEMENT ENGINEERING
SUBJECT	COMPUTER AIDED DESIGN
TYPE OF EDUCATIONAL ACTIVITY	B
AMBIT	50294-Ingegneria aerospaziale
CODE	02605
SCIENTIFIC SECTOR(S)	ING-IND/15
HEAD PROFESSOR(S)	MANCUSO ANTONIO Professore Ordinario Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	9
INDIVIDUAL STUDY (Hrs)	144
COURSE ACTIVITY (Hrs)	81
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	2° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	**MANCUSO ANTONIO** Friday 09:00 11:00 Stanza del docente (Ed.8, I Piano, Scala F10). Per motivate ragioni e ammesso il ricevimento su Teams (codice stanza 3e6igac)

PREREQUISITES	general concepts of mathematics and geometry.
LEARNING OUTCOMES	Knowledge and understanding: the student at the end of the course will be able to understand and read a technical drafting. Will be able to model both single objects and assembled systems by means of bidimensional CAD software. Applying knowledge and understanding: the student will be able to apply the better modeling strategy according to real objects. Making judgments: the student will be able to interpeter the available information in order to set up the better modeling strategy and representation Communication skills: the student will be able to communicate with skilled people about representation techniques, assembly strategies and CAD modeling. Learning ability: the student will be able to distinguish standardazied elements and the related representation methodologies.These knoledge will allow him to continue the engineering studies with greater autonomy and later on, to face the profession with a wealth of fundamental knowledge essential in the planning stages.
ASSESSMENT METHODS	A computer aided drafting; a structured test composed of multiple choice questions and open answers; a book containing the exrecises assigned during the course. The graphic test is aimed to evaluate the ability of the student in executing a technical drafting according to the Standards. The structured test composed of multiple choice questions and open answers aims to evaluate the student insight and the ability to express a concept by means of a sketch. The exercises assigned during the course will be reviewed constantly in the classroom adding details learnt during theoretical lessons. The global evaluation will take into account all the aspect previously detailed and the final grade will be the arithmetic average of each single grade. The final evaluation will take into account all the aspect previously detailed. Evaluation Criteria 30 and 30 cum laude: excellent knowledge of the topics, excellent properties language, good analytical ability, the student is able to apply the knowledge to solve proposed problems 26-29: good mastery of the subjects, full of language, the student is able to apply knowledge to solve problems proposed 24-25: basic knowledge of the main topics, discrete properties language, with limited ability to independently apply the knowledge to the solution of the proposed problems 21-23: it does not have full command of the main teaching topics but it has the knowledge, satisfactory command of the language, poor ability to independently apply the knowledge acquired 18-20: minimal knowledge of the main topics of teaching and technical language, very little or no ability to independently apply the acquired knowledge. Insufficient: it does not have an acceptable knowledge of the contents of Topics covered in the teaching.
EDUCATIONAL OBJECTIVES	The course is aimed to provide the ability in the representation and modelling of objects by means of commercial software like for instance, AutoCAD or Rhinoceros. The educational objective concerns the student's ability in solving simple problems applying a general scientific methodology. During the course, in fact, the students will be involved in problem solving according to the modern design criteria. They will be asked to make choices, apply methods and synthesize all the information in a draft computer made or hand sketched. These educational objectives are functional to the continuation of engineering studies
TEACHING METHODS	frontal lessons and classroom exercises
SUGGESTED BIBLIOGRAPHY	Chirone – Tornincasa; Disegno Tecnico Industriale. Ed. Il Capitello, Torino. Dispense e lucidi forniti dal docente.

SYLLABUS

Hrs	Frontal teaching
20	Part one - Basics on drafting and representation; real objects survey and representation; Orthographic views, intersection between solids and solid/surfaces. International technical drafting standards: size, line type, views, sections, dimensions and related methods. Functional and technological dimensions. Geometric dimensioning and tolerancing.
10	Part two - normalized machine elements representation. Thread and related applications. Geometric tolerancing. Permanent fastening: welding and riveting. Shafts and stub links. Bearings: classification, representation and field of applications.

SYLLABUS

Hrs	Frontal teaching
10	Part three - CAD systems: classification, main characteristics, application criteria. Two dimensional modeler based on primitives. Technical drafting set up. Graphical standards exchange formats (IGES, STL, DXF).

Hrs	Practice
41	Part four - Exercise. freehand sketching. Orthographic views of single objects and assembled systems. Generation of executive drafting.