

UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Ingegneria
ACADEMIC YEAR	2020/2021
BACHELOR'S DEGREE (BSC)	ELECTRONICS ENGINEERING
SUBJECT	GEOMETRY
TYPE OF EDUCATIONAL ACTIVITY	A
АМВІТ	50283-Matematica, informatica e statistica
CODE	03675
SCIENTIFIC SECTOR(S)	MAT/03
HEAD PROFESSOR(S)	VALENTI ANGELA Professore Ordinario Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	96
COURSE ACTIVITY (Hrs)	54
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	1
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	VALENTI ANGELA
	Monday 15:00 17:00 Microsoft teams
	Wednesday 15:00 17:00 Microsoft teams

DOCENTE: Prof.ssa ANGELA VALENTI

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PREREQUISITES	Basic knowledge of elementary algebra, euclidean geometry and analytic geometry of the plane . First elements of mathematical logic : concepts of definition, theorem , demonstration , role of examples and counterexamples .	
LEARNING OUTCOMES	The knowledge and understanding. The student at the end of the course will gain the knowledge on key issues, motivation and basic methods of linear algebra and analytic geometry, Applying knowledge and understanding. The student will be able to use the methods and the conceptual tools of Geometry and Algebra to solve problems and to identify an algebraic-geometric entity under some conditions. It will be also able to apply the acquired knowledge in more general areas. Making judgments The student will be able to evaluate the difficulty of a problem and to choose the simplest strategies for dealing with the typical problems of linear algebra and geometry, recognizing in this way the usefulness of the tools learned during the course. Communication skills The student will acquire the logical-deductive rigor and the abilities to express the contents of the course. In particular, he will be able to state and to prove theorems, but also to discuss the issues concerning the statement of a theorem and its applications. Learning skills The course helps with other math courses to provide the basis of mathematical and scientific language. The student will have learned the interactions between the methods acquired in the course and mathematical models that may arise in other parallel courses.	
ASSESSMENT METHODS	The assessment methods will be focused on the evaluation of the results attended (see below) in accord with the describers of Dublino. The final vote will be given in thirtieths and it will range from 18/30 to 30/30 with praise. The aim of the examination is to test the level of achievement of knowledge, skills and abilities indicated . The examination is divided into two parts : written test and oral exam . The written test will concern the application of the arguments studied during the course. It will concern the application of the arguments studied during the student have to obtain the score of at least 18/30 in the written exam. The oral exam will deal with the theoretical aspects of the course topics . It will consist of an interview to assess the acquired knowledges , the property of mathematical language, the mathematical rigor and the logical deductive properties. It consists of questions and proofs on the theory presented in the course. In addition, based on the written exam, we can be required clarifications on errors and resolutions of exercises. The final vote will be given in thirtieths. (rating 30-30L): Excellent knowledge of subjects and theories addressed in the course; good degree of awareness and autonomy in the application of theories to solve problems; (rating 24-29): Good knowledge of subjects and theories addressed in the course; fair degree of awareness and autonomy in the application of theories to solve problems; (rating 24-25): fair knowledge of subjects and theories addressed in the course; fair degree of awareness and autonomy in the application of theories to solve problems; (rating 18-20): sufficient knowledge of subjects and theories addressed in the course; poor degree of awareness and autonomy in the application of theories to solve problems;	
EDUCATIONAL OBJECTIVES	To Know the basic elements of Linear Algebra and the relative applications to the Geometry. Set up an hypothetical-deductive reasoning.	
TEACHING METHODS	Lessons and excercise sessions.	
SUGGESTED BIBLIOGRAPHY	VACCARO G., CARFAGNA A., PICCOLELLA L.: "Lezioni di geometria e algebra lineare" Zanichelli CARFAGNA A., PICCOLELLA L., "Complementi ed Esercizi di Geometria ed Algebra lineare", Ed. Zanichelli. A. BERNARDI - A. GIMIGLIANO, Algebra Lineare e Geometria Analitica – CittaStudi Edizioni, 2014, NOVARA; L. MAURI - E. SCHLESINGER, Esercizi di Algebra Lineare e di Geometria - Zanichelli, 2013; Dispense ed esercizi disponibili in rete	
SYLLABUS		

Hrs	Frontal teaching	
2	Algebraic structures: groups, rings , fields.	

SYLLABUS

Hrs	Frontal teaching	
13	Vectorial spaces. Matrices. Determinant. System of linear equations. Linear maps	
3	Eigenvalues and eigenvectors. Similar matrices and carateristic polynomial. Diagonalization.	
10	Analitic Geometry	
Hrs	Practice	
26	Exercises on the topics of the lectures .	