



UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	Ingegneria
ACADEMIC YEAR	2021/2022
BACHELOR'S DEGREE (BSC)	MANAGEMENT ENGINEERING
SUBJECT	PHYSICS II
TYPE OF EDUCATIONAL ACTIVITY	A
AMBIT	50293-Fisica e chimica
CODE	07870
SCIENTIFIC SECTOR(S)	FIS/01
HEAD PROFESSOR(S)	ABBENE LEONARDO Professore Associato Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	6
INDIVIDUAL STUDY (Hrs)	96
COURSE ACTIVITY (Hrs)	54
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	2
TERM (SEMESTER)	1° semester
ATTENDANCE	Not mandatory
EVALUATION	Out of 30
TEACHER OFFICE HOURS	

PREREQUISITES	- Vector Analysis - Common Derivatives and Integrals - First and Second Order Differential Equations - Classical Mechanics
LEARNING OUTCOMES	Knowledge and understanding The student at the end of the course will have knowledge of the issues involved with Classical Physics. In particular, the student will be able to understand issues related to Oscillations, Waves and Electromagnetism. Applying knowledge and understanding The student will have acquired their own methods of Classical Physics and will be able to apply the basic principles to practical situations. In particular it will be able to use the equations of Classical Physics to solve problems of Oscillations, Waves and Electromagnetism. Making judgments The student will be able to apply the general scientific methodology to solve problems and deal with a scientific approach new problems; also acquire the ability to model phenomena in a simple and complex problems. Communication skills The student will acquire the ability to express concepts of physics related to the course with appropriate and rigorous terminology. Learning ability The student will have the ability to learn new complex issues such as basic principles of classical physics; This will allow him to continue his engineering studies with greater autonomy and later to face the profession with a wealth of fundamental knowledge essential in the planning stages.
ASSESSMENT METHODS	1 Written Exam + 1 Oral Exam. 1. Assessment procedure for the Written Exam The Written exam consists of 3 problems to be solved, namely: a problem on oscillations and waves, or electrostatics or electric current, and a problem on static and time-variable magnetic field and electromagnetic waves. Each issue includes 3 results to be calculated in a literal form or in digital form. The written examination will seek to determine the possession of skills, abilities and skills required. The stimuli, well-defined, clear and interpretable only, allow to formulate independently the response, and are structured so as to ensure comparability. The closing of the stimulus and the response is used to determine a priori, that is, at the time of the test construction, and therefore before it is administered, the score to be assigned to each question depending on the answer proves correct, incorrect or misleading statement. The assessment is expressed in thirtieth and admission to oral test is determined by a minimum score. 2. Evaluation criteria for the oral examination The oral test consists of an interview, in order to check that you have skills and knowledge disciplinary provided by the course; the evaluation is expressed in thirtieths. The questions, both open both semi-structured and specifically designed to test the results of learning provided for, will tend to occur) the knowledge captured; b) the processing capacity, c) have adequate display capacity on the course contents. In particular will demand the ability to establish connections between the content (theories, models, tools, etc.). The final evaluation will take into account both the score of the Written Exam than that of the Oral Exam. The final evaluation will be equal to the arithmetic mean of the scores of the two Exams. Excellent 30-30 and praise, very good knowledge of the topics, excellent properties of language, good analytical ability, the student is able to apply knowledge to solve problems proposed 26-29 Very Good, Good command of the topics, full of language, the student is able to apply knowledge to solve problems proposed 24-25 good, basic understanding of the main topics, discrete properties of language, with limited ability to independently apply the knowledge to the solution of the proposed problems Satisfactory 21-23, has not fully mastered the main teaching subjects but it has the knowledge, satisfactory property language, poor ability to independently apply the knowledge acquired Sufficient 18-20, Minimum basic understanding of the major teaching and technical language issues, very little ability to independently apply the knowledge acquired

	Insufficient, it does not have an acceptable knowledge of the contents of the topics covered in the teaching.
EDUCATIONAL OBJECTIVES	The course objective is to provide an essential framework of physical laws that form the basis oscillations, waves and electromagnetism. Special emphasis is given to the general scientific methodology in solving problems. The educational objective concerns the ability of the students to solve simple problems of classical physics course, to apply the general scientific methodology to solve problems and deal with a scientific approach new problems. These educational objectives are functional to the continuation of engineering studies with greater autonomy and later to face the profession with a wealth of fundamental knowledge essential in the planning stages.
TEACHING METHODS	- Frontal lessons - Classroom exercises.
SUGGESTED BIBLIOGRAPHY	- Fisica vol.2, Elettromagnetismo e Onde di Paolo Mazzoldi, Massimo Nigro, Cesare Voci, EdiSES- Napoli - D. Halliday-R. Resnick-K. S. Krane, FISICA vol.2, Editrice, Ambrosiana-Milano - R.A.Serway - Fisica vol.II - EDISES Napoli

SYLLABUS

Hrs	Frontal teaching
9	Oscillations and Waves
12	Electrostatics
4	Electric Current
5	Magnetic Field
6	Variable electric and magnetic fields
3	Electromagnetic Waves
Hrs	Practice
2	Oscillations and Waves
5	Electrostatics
2	Electric Current
2	Magnetic Field
3	Variable electric and magnetic fields
1	Electromagnetic Waves