UNIVERSITY OF BASILICATA STUDIES
DEPARTMENT OF MATHEMATICS, INFORMATICS AND ECONOMICS

COURSE: Physics I			
ACADEMIC YEAR:2019/2020			
TYPE OF EDUCATIONAL ACTIVITY: (Basic)			
TEACHER: Prof. Celestina Satriano			
e-mail: satriano@unibas.it		website: http://satriano.web.cern.ch/	
phone: 0971 206167		mobile (optional):	
Language: Italian			
ECTS: 9	n. of hours: 72	Campus: Potenza Dept.: DIMIE Program: Matematica (L-35)	Semester: First

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The aim of the course is to provide a thorough knowledge of the fundamental laws of classical mechanics of particles and systems and a basic knowledge of thermodynamics and gases properties.

At the end of the course the student should be able to solve simple numerical problems related to the theoretical topics of the lectures.

PRE-REQUIREMENTS

Knowledge of algebra, geometry and analysis from the courses of the first year.
Basic knowledge of differential and integral calculus.

SYLLABUS

Physics and measurements.

Kinematics of a particle.

Dynamics of a particle.

Work and energy.

Momentum, impulse and collisions.

Rotational motion and rigid systems dynamics.

Oscillations.

Gravitation.

Elements of fluid mechanics.

Thermometry and ideal gases.

Heat and the first law of thermodynamics.

Heat engines, second law of thermodynamics and entropy.

TEACHING METHODS

Frontal theoretical lessons and numerical examples.

EVALUATION METHODS

Written examination (multiple choice test) and Oral examination.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Elementi di Fisica - Meccanica Termodinamica P. Mazzoldi, M. Nigro, C. Voci
Fisica I - Meccanica Termodinamica C. Mencuccini, V. Silvestrini
Fondamenti di Fisica D. Halliday, R. Resnick, J. Walker

INTERACTION WITH STUDENTS

At the beginning of the course, after describing objectives, program and methods of verification, the teacher provides students with her website for further information. Simultaneously, she collects the list of the students who intend to enroll in the course, together with name, academic ID and e-mail.
The teacher receives students: Tuesdays from 15:30 to 17:30 and Thursdays from 15:30 to 17:30 at her office.
In addition to weekly reception, the teacher is available at all times for students, following arrangements via e- mail.

EXAMINATION SESSIONS (FORECAST)[1]

04/02/2020, 13/03/2020, 16/06/2020, 21/07/2020, 29/09/2020, 27/10/2020, 14/12/2020

SEMINARS BY EXTERNAL EXPERTS YES □ NO X

FURTHER INFORMATION

[1] Subject to possible changes: check the web site of the Teacher or the Department/School for updates.