UNIVERSITÀ DI PAVIA

Anno Accademico 2021/2022

RADIOACTIVITY I

Enrollment year	2020/2021
Academic year	2021/2022
Regulations	DM270
Academic discipline	FIS/04 (NUCLEAR AND SUBNUCLEAR PHYSICS)
Department	DEPARTMENT OF PHYSICS
Course	
Curriculum	Didattica e storia della fisica
Year of study	2°
Period	1st semester (04/10/2021 - 19/01/2022)
ECTS	6
Lesson hours	48 lesson hours
Language	Italian
Activity type	ORAL TEST
Teacher	SALVINI PAOLA (titolare) - 6 ECTS
Prerequisites	Basic knowledge of quantum mechanics (wave function, tunnel effect), basic knowledge of the nuclear and atomic structure, electromagnetism basic knowledge
Learning outcomes	Knowledge of decay law and of main radioactive phenomena. Understanding of the main risks connected to radiation. Description of some radioactive phenomena and their applications
Course contents	radioactive decay law, radioactive families, natural radioactivity, biological effect of radiation, basic knowledge of nuclear reactor and effects of nuclear accidents, radiodatation, measurements of concentration by activation method (laboratory at LENA), gamma decay, alfa decay, exotic decays, beta decay, the sun and stellar nucleosynthesis
Teaching methods	Mainly frontal lectures with some experiences performed at the

	Laboratory of Applied Nuclear Energy (measurements of mean-life, range and analysis for neutron activation)
Reccomended or required readings	A.Kamal "Nuclear Physics" -Ed.Springer. Possibile insights on specific argumentsi: W.R.Leo “Techniques for Nuclear and Particle Physics Experiments: A How to Approach” Ed.Springer
Assessment methods	Oral examination at the end of the lectures. As an alternative it is proposed to divide the examination in two parts, one after about half the lectures and the second one at the end of the course. The first part consists of a seminar on a subject chosen by the student and connected to the first part of the program , the second one is an oral examination of the student's knowledges of the second part of the program
Further information	
Sustainable development goals - Agenda 2030	$lbl_legenda_sviluppo_sostenibile