



RADIOACTIVITY I	
Enrollment year	2017/2018
Academic year	2017/2018
Regulations	DM270
Academic discipline	FIS/04 (NUCLEAR AND SUBNUCLEAR PHYSICS)
Department	DEPARTMENT OF PHYSICS
Course	
Curriculum	Fisica biosanitaria
Year of study	1°
Period	1st semester (02/10/2017 - 19/01/2018)
ECTS	6
Lesson hours	48 lesson hours
Language	Italian, English if requested (the course is labelled "English -friendly")
Activity type	ORAL TEST
Teacher	SALVINI PAOLA (titolare) - 6 ECTS
Prerequisites	Basic knowledge of quantum mechanics (wave function, transition probability, tunnel effect), basic knowledge of the nuclear and atomic structure
Learning outcomes	Radioactive phenomena comprehension, knowledge of the main risks connected to radiation and possible applications
Course contents	radioactive decay law, radioactive families, natural radioactivity, radiation-matter interaction. biological effect of radiation, Radon, nuclear accidents, radiodation, measurements of concentration by activation method (laboratory at LENA), gamma decay, alfa decay, exotic decays, beta decay, neutrino mass measurements
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	Textbook: G.Bendiscioli "Fenomeni Radioattivi" Ed.Springer , for all students not speaking italian :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. As an alternative it's proposed the average between the marks gained in the two written essay done around the middle and the end of the course
Further information	
Sustainable development goals - Agenda 2030	\$ibl legenda sviluppo sostenibile