



Máster Universitario en
Física: Radiaciones,
Nanotecnología,
Partículas y Astrofísica

Course Listing and Contents

Common Module (18 ECTS)

SUBJECT	ECTS
(1) SUPPLEMENTARY MATHEMATICS AND PHYSICS	6
(2) APPROXIMATION METHODS IN PHYSICS	3
(3) ELECTRONIC MICROSCOPY AND CHARACTERIZATION TECHNIQUES	3
(4) DATA ANALYSIS	3
(5) INVITED LECTURERS	3

Master Thesis (12 ECTS)

SUBJECT	ECTS
(6) MASTER THESIS	12

Physics and Technology of Radiation (48 ECTS)

SUBJECT	ECTS
(7) MEDICAL AND INDUSTRIAL APPLICATIONS OF RADIATIONS	6
(8) RADIATION DETECTION AND DOSIMETRY	6
(9) RADIATION-MATTER INTERACTION	6

SUBJECT	ECTS
(10) RADIOBIOLOGY	6
(11) LASER PHYSICS AND APPLICATIONS	6
(12) NEW DEVELOPMENTS IN QUANTUM PHYSICS	6
(13) RADIATIVE PROCESSES IN ATOMS AND NUCLEI	6
(14) NUCLEAR TECHNOLOGY	6

Nanotechnology: Physics and Applications (48 ECTS)

SUBJECT	ECTS
(15) DESIGN AND CHARACTERIZATION OF NANOMATERIALS	6
(16) NANOSTRUCTURED FLUIDS. RHEOLOGICAL PROPERTIES	6
(17) COLLOIDS AND INTERFACES: APPLICATION TO NANOSYSTEMS WITH BIOTECHNOLOGICAL INTEREST	6
(18) PHYSICAL PROPERTIES OF MATERIALS. SCALE EFFECTS	6
(19) CHARACTERIZATION, SIMULATION AND MODELING OF ELECTRONIC NANODEVICES	6
(20) OPTOELECTRONIC NANODEVICES	6
(21) NANOSTRUCTURES FOR ENERGY GENERATION AND STORAGE	6
(22) PHOTONICS. OPTICAL INSTRUMENTATION AND APPLICATIONS	6

Physics of Particles and Astrophysics (48 ECTS)

SUBJECT	ECTS
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(23) ASTROBIOLOGY AND EXTRA-SOLAR PLANETS	6
(24) ASTROPARTICLES	6
(25) COSMOLOGY AND GALAXIES	6
(26) ORIGIN AND EVOLUTION OF THE CHEMICAL ELEMENTS IN THE UNIVERSE	6
(27) PHYSICS OF DETECTORS	6
(28) PHYSICS BEYOND THE STANDARD MODEL	6
(29) STANDARD MODEL	6
(30) QUANTUM FIELD THEORY	6