

Master of Science Programme in Physics, 120 ECTS - STUDY PLAN

YEAR 1 (54 ECTS)

COURSES	SEMESTER	ECTS	ECTS PARTITIONING
<u>NUCLEAR AND SUBNUCLEAR PHYSICS</u>	1	8	7 LECTURES 1 EXERCISES
<u>PHYSICS LABORATORY</u>	1	8	4 LECTURES 4 PRACTICE
<u>THEORETICAL PHYSICS</u>	1	8	7 LECTURES 1 EXERCISES
<u>STATISTICAL MECHANICS</u>	2	8	7 LECTURES 1 EXERCISES
<u>COMPUTATIONAL METHODS FOR PHYSICS</u>	2	8	5 LECTURES 3 PRACTICE
<u>CONDENSED MATTER PHYSICS</u>	2	8	7 LECTURES 1 EXERCISES
One module among the following options:			
i. <u>QUANTUM ELECTRONICS FOR ATOMIC PHYSICS</u>			
ii. <u>STOCHASTIC PROCESSES</u>			
iii. ASTROPHYSICS	2	6	LECTURES
iv. <u>ECOLOGICAL CLIMATOLOGY</u>			
v. AEROTHERMODYNAMICS AND THERMOSTRUCTURES FOR AEROSPACE			

YEAR 2 (66 ECTS)

COURSES	SEMESTER	ECTS	ECTS PARTITIONING
One module among the following options:			
i. NANOTECHNOLOGIES AND QUANTUM TECHNOLOGIES			
ii. MODELING OF COMPLEX SYSTEMS			
iii. PARTICLE ASTROPHYSICS			
iv. PHYSICS FOR ISOTOPE RESEARCH	1	6	LECTURES
v. AEROSPACE PHYSICS METHODOLOGIES			
vi. MICROSCOPIC NUCLEAR STRUCTURE			
ELECTIVE COURSE (SEE ELECTIVE COURSES TABLE)	1	6	LECTURES
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EUROPEAN LANGUAGES	1	3	
CURRICULAR INTERNSHIP	2	3	
MASTER THESIS AND DISSERTATION	1 and 2	42	

LIST OF ELECTIVE COURSES

TABLE OF ELECTIVE COURSES (6 ECTS)

STATISTICAL LEARNING

DATA MINING AND BIG DATA

LASER SPECTROSCOPY

BIOPHOTONICS

OPTICAL SENSING

ADVANCED EXPERIMENTAL TECHNIQUES FOR NUCLEAR AND PARTICLE PHYSICS

NUCLEAR ASTROPHYSICS

CLIMATE CHANGE AND RELATED IMPACTS

DYNAMIC MODELS FOR WEATHER PREDICTION AND CLIMATE

PROPULSION AND PLASMA PHYSICS

SPACE ACCESS AND EARTH OBSERVATION

NOTES:

THERE ARE SIX COMPULSORY COURSES OVER A TOTAL OF TEN

STUDENTS CAN CHOOSE AMONG FIVE SPECIALISATIONS, AS REPORTED HEREAFTER:

- i. ATOMIC AND MOLECULAR PHYSICS
- ii. PHYSICS OF COMPLEX SYSTEMS
- iii. NUCLEAR AND PARTICLE ASTROPHYSICS
- iv. ENVIRONMENTAL PHYSICS
- v. AEROSPACE PHYSICS

TO THIS END, THE STUDENTS CAN USE ELECTIVE AND RESTRICTED ELECTIVE COURSES, FOR A TOTAL OF 24 ECTS.

IT IS ALSO POSSIBLE TO CUSTOMISE A PARTICULAR STUDY TRACK WITH A MIXTURE OF COURSES, WHICH ARE OF INTEREST TO THE STUDENT, THUS ALLOWING ONE TO TARGET OTHER SPECIALISATIONS.

CONVERSION FROM ECTS TO HOURS:

1 ECTS OF LECTURES = 8 HOURS

1 ECTS OF EXERCISES/PRACTICE = 12 HOURS