

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

YEAR 1 (57 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
<u>FURTHER LINGUISTIC KNOWLEDGE</u>	2	3	3 LECTURES
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. METHODOLOGIES FOR AEROSPACE PHYSICS			

YEAR 2 (63 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			
v. Aereothermodynamics and Thermostructures for Aerospace	1	6	LECTURES
vi. MICROSCOPIC NUCLEAR STRUCTURE			
vii. Quantum Computing			
ELECTIVE COURSE (SEE ELECTIVE COURSES TABLE)	1	6	LECTURES
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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.

PROPAEDEUTICITY

- Condensed Matter Physics is propaedeutic to Photonics and Nanotechnologies
 - Statistical Mechanics is propaedeutic to Modeling of complex systems
 - Nuclear and Subnuclear Physics is propaedeutic to Particle astrophysics
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CONVERSION FROM ECTS TO HOURS:

1 ECTS OF LECTURES = 8 HOURS

1 ECTS OF EXERCISES/PRACTICE = 12 HOURS