



MASTER (LM) DEGREE COURSE IN
PHYSICS OF DATA

**Study programme for students enrolled in the academic year 2025-2026 – entirely held in
English**

1st YEAR	
MANDATORY UNITS	CREDITS
LABORATORY OF COMPUTATIONAL PHYSICS (C.I.)	12
MANAGEMENT AND ANALYSIS OF PHYSICS DATASET (C.I.)	12
MACHINE LEARNING	6
ADVANCED STATISTICS FOR PHYSICS ANALYSIS	6
1 UNIT TO CHOOSE AMONG THE FOLLOWING:	CREDITS
THEORETICAL PHYSICS	6
GENERAL RELATIVITY	6
MODELS OF THEORETICAL PHYSICS	6
1 UNIT TO CHOOSE AMONG THE FOLLOWING:	CREDITS
NUCLEAR PHYSICS	6
STATISTICAL MECHANICS	6
QUANTUM INFORMATION WITH ATOMS AND PHOTONS	6
THEORETICAL PHYSICS OF THE FUNDAMENTAL INTERACTIONS	6
FUNDAMENTALS OF ASTROPHYSICS AND COSMOLOGY	6
2 UNITS TO CHOOSE AMONG THE FOLLOWING:	CREDITS
STATISTICAL MECHANICS OF COMPLEX SYSTEMS	6
BIOLOGICAL DATASETS FOR COMPUTATIONAL PHYSICS	6
PHYSICS OF COMPLEX NETWORKS: STRUCTURE AND DYNAMICS	6
INTRODUCTION TO QUANTUM HARDWARE	6
COMPUTER VISION AND COGNITIVE SYSTEMS	6
GAME THEORY	6
ADVANCED TOPIC IN PHYSICS OF DATA	6

2nd YEAR	
MANDATORY UNIT:	CREDITS
INFORMATION THEORY AND INFERENCE	6
2 UNITS TO CHOOSE AMONG THE FOLLOWING:	CREDITS
QUANTUM INFORMATION AND COMPUTING	6
PHYSICS OF LIFE, DATA AND EPIDEMIOLOGY	6
PHYSICAL MODELS OF LIVING SYSTEMS	6
COMPUTATIONAL ASTROPHYSICS	6
ASTRO-STATISTICS AND COSMOLOGY	6
PROGRAMMABLE HARDWARE DEVICES	6
MODERN COMPUTING FOR PHYSICS	6
NEURAL NETWORKS AND DEEP LEARNING	6
12 ADDITIONAL FREE CHOICE CREDITS	
STAGE	8
FINAL THESIS/DISSERTATION	22

ANY FURTHER NOTES

- Attendance is mandatory according to the didactic regulation.
- Free-choice credits can be chosen among the university's educational offer as long as they are consistent with the educational path. Units specifically for free choice have been introduced into the offer, shown in the table, the contents of which are certainly consistent with the educational path of the study programme.