

Double Degree agreements

Double Degree



Double / Joint degrees refers to educational programmes which provide an integrated study curriculum in cooperation with other international universities and mobility periods for students and teaching staff. After the final examination students achieve two or more academic qualifications issued by the partner universities (**Double or Multiple Degree**) or a jointly conferred qualification recognized and validated by all the partner universities (**Joint Degree**).

Corse of Study	Partner University	Country	City	Responsible office	Documenti
Physics	University of Turku	Finland	Turku	Rosario Mantegna	UTU_Palermo_agreement_signed Updated_Annexes_DD_UNIPA_UTU
Physics of Complex Systems	Università delle Isole Baleari (Spagna)	Spagna	Palma De Maiorca	Salvatore Micciché	Agreement Inglese - Spagnolo

University of Turku (UTU)

Master's Degree in "Exact Sciences"

track on:

- i) Theoretical Physics,
- ii) Astronomy and Space Physics,
- iii) Materials Physics.

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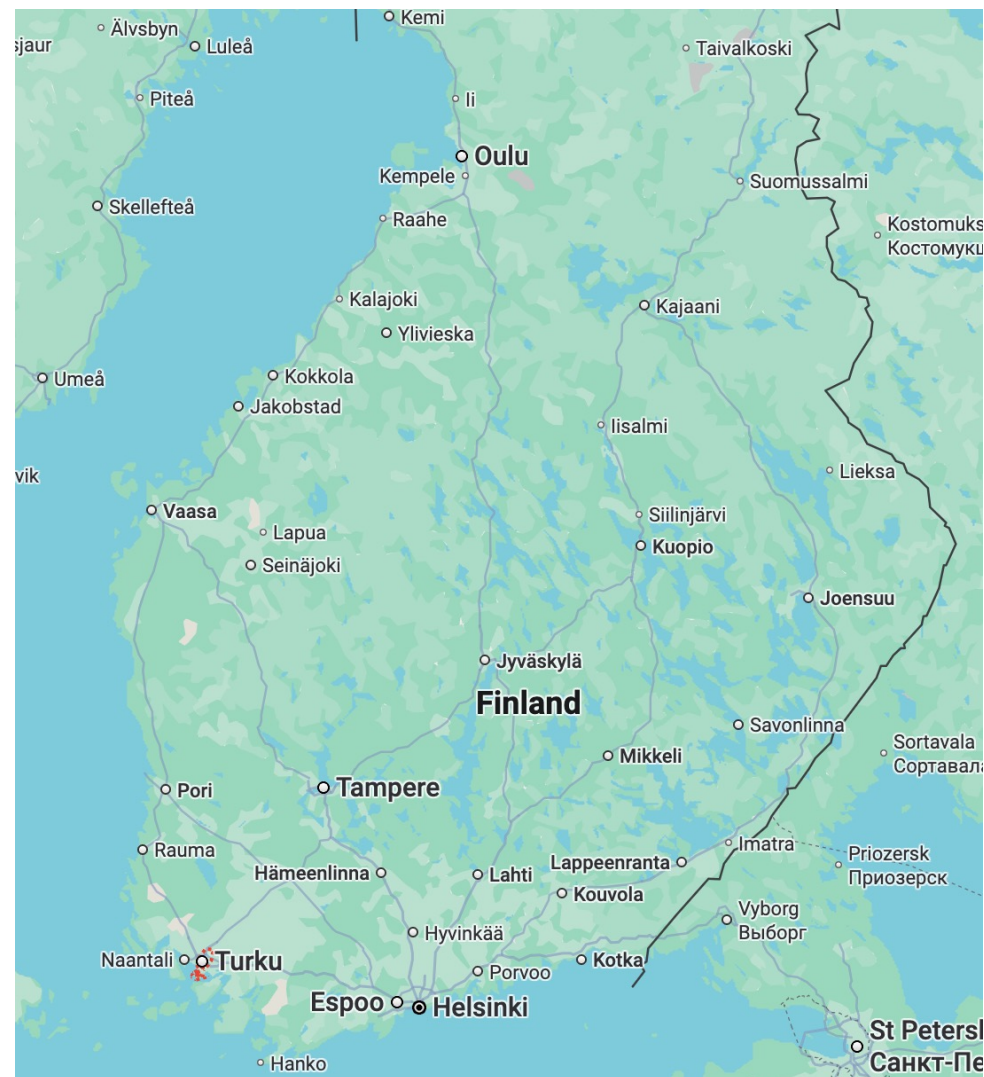
University of Palermo (UNIPA)

Master's Degree in "Physics" (LM-17)

International Degree Programmes at University of Turku

Discover the international degree programmes of the University of Turku! The next application round to the international degree programmes will be **7-21 January 2027**.

At UTU, you can study in international degree programmes taught in English. Find your programme and get ready to apply!



— NATURAL SCIENCES

MDP in Exact Sciences:

- Astronomy and Space Physics
- Chemistry of Drug Development
- Chemistry of Materials for Sustainable Development

- Materials Physics

- Mathematics and Statistics

- Theoretical Physics

MDP in Biosciences:

- Evolutionary Biology
- Molecular Systems Biology

Active since AA 2022/2023

Valid until AA 2026/2027

Max number of participants for each AA is 4 student for each University

Students enrolled into the agreement so far

From UNIPA to UTU

- Giulia Parisi (22/23 DD MS)
- Valerio Fardella (22/23 DD AS)
- Gloria Liarda (24/25 Th)
- Emanuele Balistreri (24/25 Th)

From UTU to UNIPA

- Eeli Kinnunen (22/23 DD AS)
- Johannes Annala (24/25 Th)
- Stina Peteri (25/26 AS)
- Teemu Honkanen (25/26 Th)
- four additional applicants for 2026/2027

Admission can be obtained by participating to a call opened by the University of origin.
After selection approval from the Joint Steering Committee is needed.

Usually there are two calls per year at each University.

Tuitions are paid at the origin University.

There is a financial support of the order of the Erasmus support.

Minimum requirements for the DD:

Subjects for 30 ECTS to be completed at the host University;

Master thesis completed under joint supervision;

One semester spent at the host University.

Astronomy and Space Physics

Annex 1.1

List of courses and other curricular activities that students enrolled in the Double Degree Programme between the Master's Degree in "Physics" at UNIPA and the Master's Degree in "Exact Sciences" track on: "**Astronomy and Space Physics**" at UTU can select to obtain at least the equivalent of 30 ECTS during the stay at the host university.

UNIPA	UTU
Master's Degree in "Physics"	Master's Degree in "Exact Sciences" Track: "Astronomy and Space Physics"
Academic Year 2024-2025 (cohort 2023-2024) Academic Year 2026-2027 (cohort 2025-2026)	Academic Year 2024-2025 (cohort 2023-2024) Academic Year 2026-2027 (cohort 2025-2026)
Thematic Courses	TFYS7044 - Cosmology I (1 semester – 5 ECTS)
22019 - THEORY OF GENERAL RELATIVITY (1 Semester - 6 ECTS)	TFYS7045 - Cosmology II (1 semester – 5 ECTS)
21944 - LABORATORY OF NUCLEAR AND SUBNUCLEAR PHYSICS (1 Semester - 6 ECTS)	TÄHT7053 - Spectroscopic diagnostic in astrophysics (2 semester – 8 ECTS)
Elective Courses	TÄHT7061 - Stellar structure and evolution (1 semester – 7 ECTS)
22020 - HIGH ENERGIES ASTROPHYSICS WITH LABORATORY (1 Semester - 6 ECTS)	TÄHT7055 - Observational techniques using the Nordic Optical telescope (1 semester – 7 ECTS)
21961 - ASTROPHYSICS - LABORATORY (1 Semester - 6 ECTS)	TÄHT7036 - High energy astrophysics (1 semester – 8 ECTS)
21963 - PHYSICS OF COMPLEX SYSTEMS (1 Semester - 6 ECTS)	FFYS7090 - Hydrodynamics (1 semester – 5 ECTS)
22748 - QUANTUM THERMODYNAMICS (1 Semester - 6 ECTS)	TÄHT5009 - Observational astronomy (1 semester – 5 ECTS)
21958 - COMPLEX NETWORKS (1 Semester - 6 ECTS)	TÄHT6009 - Theoretical Astrophysics (2 semester – 5 ECTS)
22618 - GAUGE THEORIES (1 Semester - 6 ECTS)	FFYS7081 - FEM Modeling (1 semester – 5 ECTS)
24010 - STANDARD MODEL (1 Semester - 6 ECTS)	TKO_3103 - Data analysis and knowledge discovery (1 semester – 5 ECTS)
22658 - RADIATION DETECTORS WITH LAB (1 Semester - 6 ECTS)	
21956 - STELLAR EVOLUTION (1 Semester - 6 ECTS)	
22425 - SPACE WEATHER (1 Semester – 6 ECTS)	
22451 - CLOUD AND <u>HIGH PERFORMANCE</u> COMPUTING (1 Semester – 6 ECTS)	

Note that list of courses will be updated

Material Physics

Annex 1.3

List of courses and other curricular activities that students enrolled in the Double Degree Programme between the Master's Degree in "Physics" at UNIPA and the Master's Degree in "Exact Sciences", track on "**Materials Physics**" at UTU can select to obtain at least the equivalent of 30 ECTS during the stay at the host university.

UNIPA	UTU
<u>Master's Degree in "Physics"</u> <u>Academic Year 2024-2025 (cohort 2023-2024)</u> <u>Academic Year 2026-2027 (cohort 2025-2026)</u>	Master's Degree in "Exact Sciences" Track: "Materials Physics" Academic Year 2024-2025 (cohort 2023-2024) Academic Year 2026-2027 (cohort 2025-2026)
Thematic Courses 22018 – COMPUTATIONAL PHYSICS WITH LABORATORY (1 Semester – 6 ECTS) 22022- BIOPHYSICS (1 Semester - 6 ECTS) 24120- INTRODUCTION TO MEDICAL PHYSICS (1 Semester - 6 ECTS) 21962 - NANO-PARTICLES AND NANO-STRUCTURES (1 Semester - 6 ECTS) 22021- STRUCTURE OF MATTER - ADVANCED COURSE (1 Semester - 6 ECTS)	FFYS7016 Structural and thermal properties of solids (1 semester – 5 ECTS) FFYS7108 - Magnetism, <u>neuromorphics</u> and superconductivity (1 semester – 5 ECTS) FFYS7015 - Physics of nanostructures (1 semester – 5 ECTS) FFYS7023 - Molecular symmetry and spectroscopy (1 semester – 5 ECTS) DTEK0042 - Acquisition and analysis of <u>biosignals</u> (1 semester – 5 ECTS)
Elective Courses 22748 - QUANTUM THERMODYNAMICS (1 Semester - 6 ECTS) 22658 - RADIATION DETECTORS WITH LAB (1 Semester - 6 ECTS) 22663 - BIOPHOTONICS WITH LABORATORY (1 Semester - 6 ECTS) 22660 - LAB OF PHYSICS OF MATTER (1 Semester - 6 ECTS)	FFYS7090 - Hydrodynamics (1 semester – 5 ECTS) FFYS7103 - Materials Physics <u>Modeling: Solids</u> (2 semester – 5 ECTS) FFYS7081 - FEM <u>Modeling</u> (1 semester – 5 ECTS) MTEK0027 - Biomaterial science (1 semester – 5 ECTS) TKO_3103 - Data analysis and knowledge discovery (1 semester – 5 ECTS)

Note that list of courses will be updated

Theoretical Physics

Annex 1.5

List of courses and other curricular activities that students enrolled in the double degree programme between the Master's Degree in "Physics" at UNIPA and the Master's Degree in "Exact Sciences" track: "**Theoretical Physics**" at UTU can select to obtain at least the equivalent of 30 ECTS during the stay at the host university. For this curriculum, a student of UNIPA participating in the Double Degree Program might need to attend the second semesters at UTU to complete courses granting a minimum of 30 ECTS.

UNIPA Master's Degree in "Physics" Academic Year 2024-2025 (cohort 2023-2024) Academic Year 2026-2027 (cohort 2025-2026)	UTU Master's Degree in "Exact Sciences" Track: "Theoretical Physics" Academic Year 2024-2025 (cohort 2023-2024) Academic Year 2026-2027 (cohort 2025-2026)
General and Thematic Courses 22671 - STATISTICAL PHYSICS (2 Semester - 6 ECTS) 22021 - STRUCTURE OF MATTER - ADVANCED COURSE (1 Semester - 6 ECTS) 22024 - QUANTUM OPTICS (1 Semester - 6 ECTS) 21962 - NANO-PARTICLES AND NANO-STRUCTURES (1 Semester - 6 ECTS) 22019 - THEORY OF GENERAL RELATIVITY (1 Semester - 6 ECTS) 22022 - BIOPHYSICS (1 Semester - 6 ECTS)	TFYS7051 - Statistical physics I (2 semester 5 ECTS) TFYS7052 - Statistical physics II (2 semester – 5 ECTS) TFYS7044 - Cosmology I (1 semester – 5 ECTS) TFYS7045 - Cosmology II (1 semester – 5 ECTS) MATE6028 - Graph Theory (2 semester – 5 ECTS) TFYS7049 - Quantum Information (2 semester – 5 ECTS) TFYS7050 - Quantum Optics (2 semester – 5 ECTS)
Elective Courses 21963 - PHYSICS OF COMPLEX SYSTEMS (1 Semester - 6 ECTS) 22748 - QUANTUM THERMODYNAMICS (1 Semester - 6 ECTS) 21958 - COMPLEX NETWORKS (1 Semester - 6 ECTS) 22618 - GAUGE THEORIES (1 Semester - 6 ECTS) 24010 - STANDARD MODEL (1 Semester - 6 ECTS) 24011 - QUANTUM INFORMATION (1 Semester - 6 ECTS) 23367 - ADVANCED MATHEMATICS FOR PHYSICS (1 Semester - 6 ECTS)	TFYS7055 - Physics and Geometry (1 & 2 semester, self-study based – 5 ECTS) FFYS7103 - Materials Physics <u>Modeling</u>: Solids (2 semester – 5 ECTS) TÄHT6009 - Theoretical Astrophysics (2 semester – 5 ECTS) FFYS7081 - FEM <u>Modeling</u> (1 semester – 5 ECTS) TKO_3108 - Algorithm design (1 semester – 5 ECTS) TKO_3103 - Data analysis and knowledge discovery (1 semester – 5 ECTS)

Note that list of courses will be updated

The Double Degree is run by a Steering Committee

7.2. Joint Steering Group: A joint Steering group will be established by the Parties to attend to the double degree programme which is monitoring the activities of the double degree programme and also providing guidance for the program's purpose. The Steering group will consist of 6 members, 3 of each university: a member of teaching staff, a member of academic affairs/administration and a student representative from each university.

- a. The tasks of the Joint Steering Group will be as follows:
 - i. to supervise, assess, and develop the study programme,
 - ii. to reassess and develop the admission criteria,
 - iii. to revise the Agreement of Cooperation, and
 - iv. to finally approve the selection of the applicants for the double degree programme.

Present composition of the Steering Committee

prof. Rosario Nunzio Mantegna, UNIPA, chair

Marika Monachello, UNIPA

Gloria Liarda (student), UNIPA

prof. Jyrki Piilo, UTU

Mari Ernvall, UTU, secretary

Antti Peltola (student), UTU

Erasmus study ongoing agreements

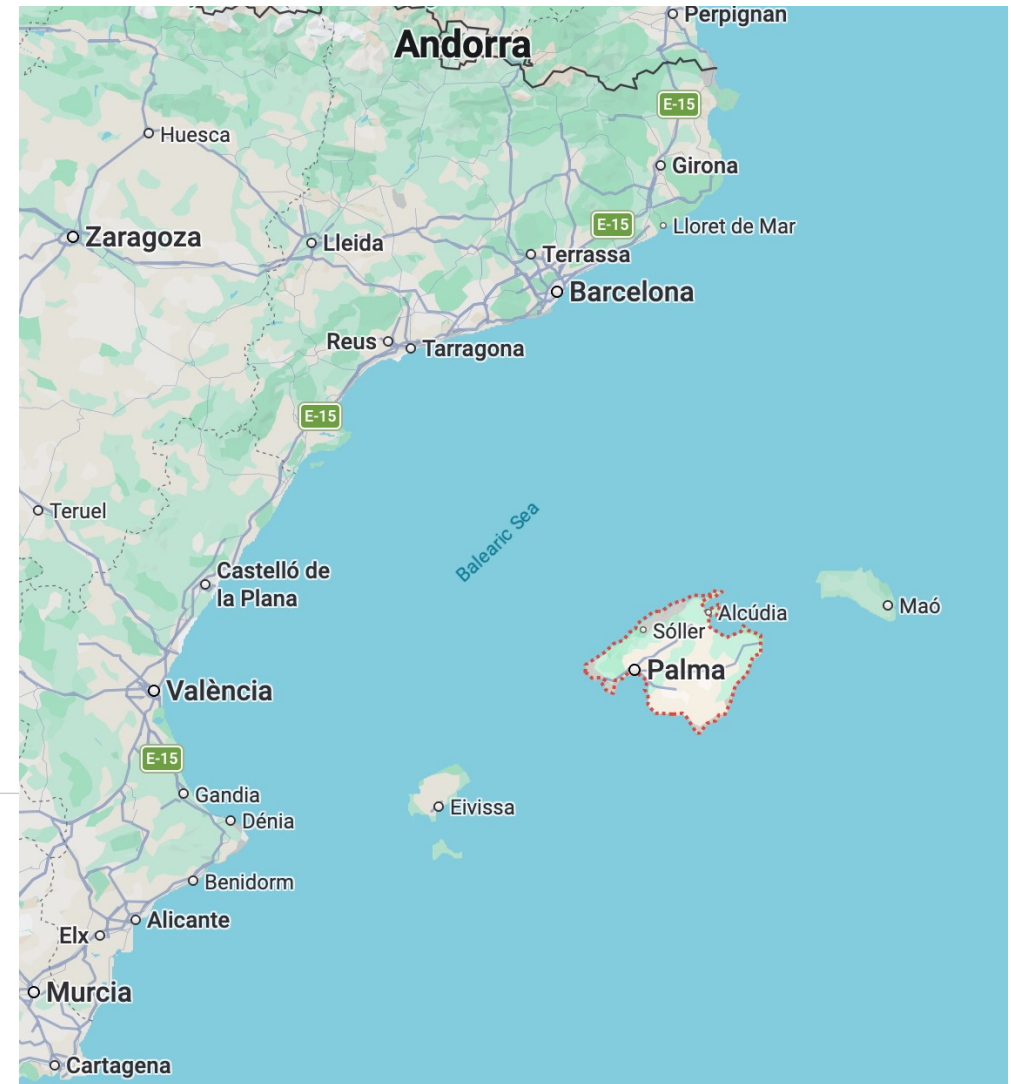
Nazione	Città	Denominazione Università	Referente	Referente esterno	Coordinatore esterno
GERMANIA	FRIBURGO	ALBERT-LUDWIGS-UNIVERSITÄT FREIBURG IM BREISGAU	MANTEGNA ROSARIO NUNZIO rosario.mantegna@unipa.it	HARALD ITA erasmus@physik.uni-freiburg.de	N/A eckelt@verwaltung.uni-freiburg.de
SPAGNA	PALMA DE MALLORCA	DT UNIVERSITAT DE LES ILLES BALEARS	MICCICHE' SALVATORE salvatore.micciche@unipa.it	DAVID SANCHEZ MARTIN david.sanchez@uib.es	NA sridir@uib.es
CINA	CHONGQING	SICHUAN INTERNATIONAL STUDIES UNIVERSITY - PIS	VINCI RENATA renata.vinci@unipa.it	N/A aa@aa.aa	YANG LIN zztiger@sisu.edu.cn
SPAGNA	ZARAGOZA	UNIVERSIDAD DE ZARAGOZA	MANTEGNA ROSARIO NUNZIO rosario.mantegna@unipa.it	JESÚS CLEMENTE GALLARDO jcg@unizar.es	REGINA LAZARO GISTAU interder@unizar.es
BELGIO	LEUVEN	KATHOLIEKE UNIVERSITEIT LEUVEN	REALE FABIO fabio.reale@unipa.it	INDRA HAUTEKIET exchange.science@kuleuven.be	ELKE TIMMERMANS elke.timmermans@int.kuleuven.be
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SPAGNA	BARCELONA	UNIVERSITAT DE BARCELONA	MANTEGNA ROSARIO NUNZIO rosario.mantegna@unipa.it	N/A	DR. MONICA NAVARRO relacions.internacionals@ub.edu
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KENIA	NAIROBI	STRATHMORE UNIVERSITY - STUDIO EXTRA UE	PERSANO ADORNO DOMINIQUE dominique.persanoadorno@unipa.it	EIRIC SAULO esaulo@strathmore.edu	ERIC SAULO esaulo@strathmore.edu
SPAGNA	MADRID	UNIVERSIDAD COMPLUTENSE DE MADRID	MANTEGNA ROSARIO NUNZIO rosario.mantegna@unipa.it	FATIMA MARTIN HERNANDEZ erasmus@fes.ucm.es	N/A rrinter@pas.ucm.es
SPAGNA	PALMA DE MALLORCA	UNIVERSITAT DE LES ILLES BALEARS	MICCICHE' SALVATORE salvatore.micciche@unipa.it	DAMIÀ GOMILA damia@ifisc.uib-csic.es	N/A sridir@uib.es

Double Degree agreement with IFISC of Palma de Mallorca

About IFISC



IFISC (Institute for Cross-Disciplinary Physics and Complex Systems) is a joint research institute of the **University of the Balearic Islands (UIB)** and the **Spanish National Research Council (CSIC)** created in 2007 building upon the former Cross-Disciplinary Physics Department of the Mediterranean Institute for Advanced Studies (IMEDEA).

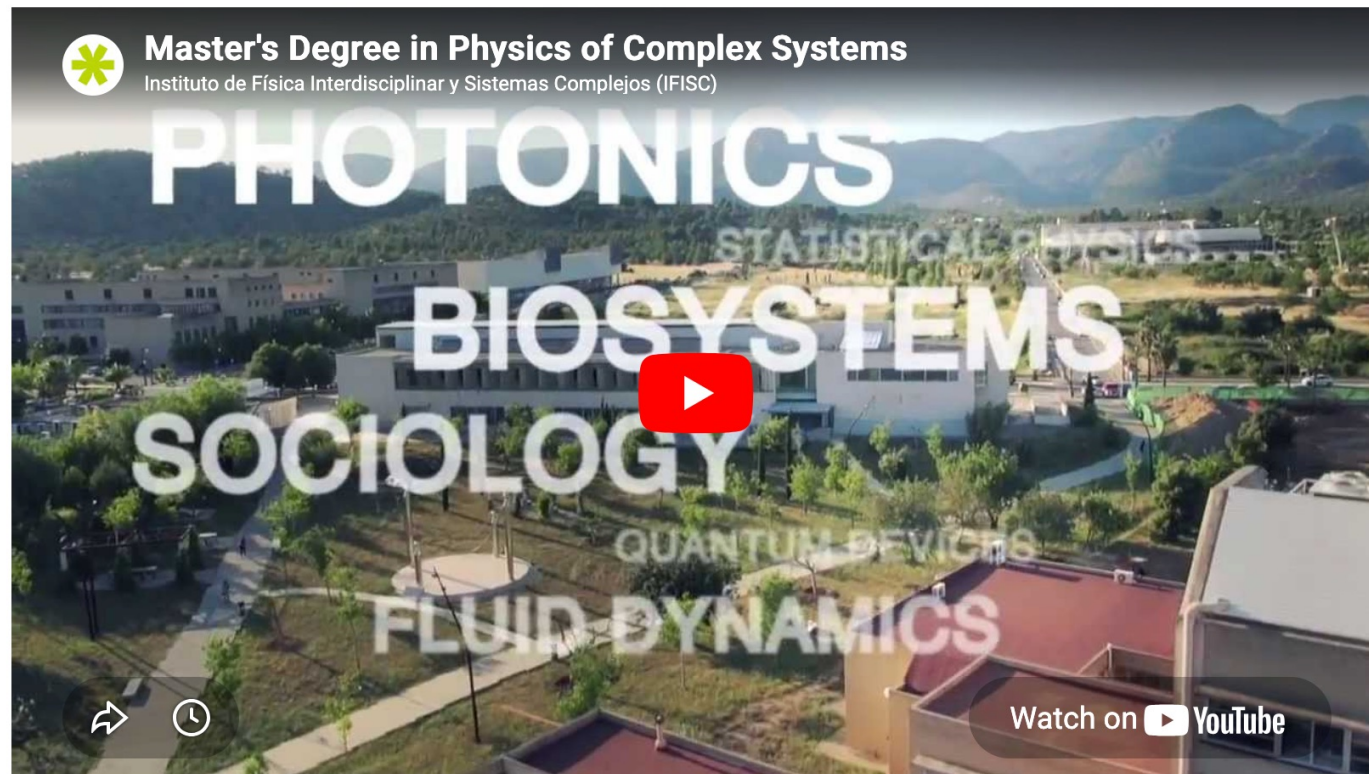


<https://ifisc.uib-csic.es/en/master/>

Welcome

The Master in Physics of Complex Systems is an official degree offered by the Universitat de les Illes Balears (UIB) in collaboration with the Spanish National Research Council (CSIC). It is organized and taught by IFISC (Institute for Cross-Disciplinary Physics and Complex), a joint UIB-CSIC research center in Palma de Mallorca, Spain.

You can apply through the UIB Centre for Postgraduate Studies.



Admission can be obtained by participating to a call opened by the University of origin. After selection approval from the Joint Steering Committee is needed.

Usually there is one call per year at each University. Max number of participants for each AA is 2 student for each University

Tuitions are paid at both Universities but Spanish expenses for Palermo's students will be deducted by the Palermo's tuition.

There is a financial support of the order of the Erasmus support.

Minimum requirements for the DD:

Subjects for 30 ECTS to be completed at the host University;

Master thesis completed under joint supervision;

One semester spent at the host University.

UIB subjects				UNIPA subjects			
subject	sem	type	ECTS	subject	sem	type	ECTS
- Advanced Complex Networks	2	Elec	3	- Advanced statistical methods 21226	1	Elec	9
- Applied Data Analysis and Machine Learning	2	Elec	3	- Astrofisica 01500	1	GAFIII	6
- Complex Networks	1	Elec	3	- Bioinformatica 15570	1	Elec	6
- Complex Quantum Systems	1	Mand	3	- Biophotonics with laboratory 22663	1	Elec	6
- Complex photonics	2	Elec	6	- Biophysics 22022 (GAF II)	1	GAFII	6
- Complex Systems	2	Elec	3	- Cloud and high performance computing 22451	1	Elec	6
Modelling in Economics				- Complex networks 21958	1	Elec	6
- Cooperative and Critical Phenomena	1	Mand	6	- Computational econophysics 21995	1	Elec	6
				- Computational Physics with Laboratory 22018	1	GAFII	6
				- Explorative methods for big data 22378	1	Elec	9
				- Fisica degli stati condensati 15315	2	GAFII	6

- Dynamical Systems, chaos and patterns	1	Mand	6	- Heuristic optimization 21194	1	Elec	6
- Ecology and Population Dynamics	2	Elec	3	- Interazione radiazione-materia 15308	2	Mand	6
- Information Theory	1	Mand	3	- Lab of Phys characterization & biosignal processing 22659	1	Elec	6
- Introduction to Data Analysis Machine Learning	1	Mand	3	- Meccanica quantistica avanzata 15316	1	Mand	6
- Modelling and Dynamics of Neural Systems	2	Elec	3	- Metodi e modelli matematici per le applicazioni 05044	2	Elec	6
- Non-Equilibrium Collective Phenomena	2	Elec	3	- Matematica avanzata per la fisica (from AA 2024/2025)	1	Elec	6
- Open quantum systems	2	Elec	3	- Nano-particles and nano-structures 21962	1	Elec	6
- Quantum Information	2	Elec	3	- Physics of Complex Systems 21963	1	Elec	6
- Simulation Methods	1	Mand	6	- Quantum optics 22014	1	Elec	6
- Spatio-Temporal Dynamics	2	Elec	3	- Quantum thermodynamics 22748	1	Elec	6
- Statistical Biophysics	2	Elec	3	- Sampling plans for social sciences 15511	1	EXT	8
- Stochastic processes	1	Mand	3	- Spettroscopia con Laboratorio 19782	2	Mand	6
- Systems Biology	2	Elec	3	- Statistical Physics 22671	2	Mand	6
				- Stochastic processes 16439	1	Elec	6
				- Structure of matter - Advanced course 22021	1	GAFI	6
				- Teoria dei campi	2	GAFI	6
				- Theory of general relativity 22019	1	GAFIII	6
				- Theory of codes and cryptography 17972	1	Elec	6

Steering Committee with 4 members (2 from each university)

prof. Salvatore Micciché, UNIPA

Two students from Unipa will participate in the DD program next academic year.

