



University of Camerino
School of Science
and Technology

PHYSICS

Master Degree

Second Cycle Degree

Duration 2 years

ECTS credits 120

Campus Location Camerino

web site

www.phys.unicam.it

*School of Science and Technology
Physics Division*

Director

prof. David Vitali

direttore.scienze@unicam.it

Course Coordinator

prof. Stefano Mancini

stefano.mancini@unicam.it

Delegates

Educational Guidance

dr. Irene Marzoli

irene.marzoli@unicam.it

Tutoring

dr. Angela Trapananti

angela.trapananti@unicam.it

International Mobility

prof. Roberto Gunnella

roberto.gunnella@unicam.it

Stage & Placement (Internship)

dr. Nicola Pinto

nicola.pinto@unicam.it

Educational Manager

dr. Anna Maria Santroni

annamaria.santroni@unicam.it

INTRODUCING THE MASTER

The Master Degree Course in Physics offerings range from freshman seminars to advanced graduate classes.

Undergraduates, graduate students and postdoctoral fellows are mentored and engaged in advanced research in condensed matter, atomic physics, quantum optics, as well as quantum information and nuclear physics.

Our strong international programs enjoy several established connections with foreign institutions and research centres.

The master benefits of a longstanding and well appreciated didactical expertise, a friendly and skilful teaching staff, and reliable supporting structures (such as study and work rooms, computer facilities, libraries) in addition to dedicated tutorship services.

After completing the degree, students seeking further training and education can choose a Professional Master course (typically lasting one year), a Specialization School (for example, the School of Specialization in Health Physics of four year duration), or a Doctoral course. The School of Advanced Studies at the University of Camerino offers a three-year Doctoral course in Physics, enabling students to start a research activity at the international level.

ADMITTANCE REQUIREMENTS

- Bachelor Degree that satisfies the requirements for access to University Master Degree courses
- List of subjects studied:
 - Classical physics;
 - Quantum physics;
 - Calculus;
 - Geometry and linear algebra;
 - Basic experimental techniques;
 - Use of basic computing systems and their application to data acquisition and processing.
- Level of language proficiency (strongly recommended): ENGLISH level B2 (Independent User)

Further information on admission rules, pre-admission deadline and other services at <http://international.unicam.it>

CAREER OPPORTUNITIES

A Master Degree in Physics opens up a broad range of job opportunities and professional careers, in both the public and private sectors: from higher education to R&D in industry and research institutions, and even in the financial markets. Physicists carry out technical tasks or provide professional support in monitoring and diagnostics of medical, health and environmental activities, in energy production, storing, and saving, or in the conservation and restoration of cultural heritage. They take part in quality control, by identifying and selecting the items to be checked, devising the control methods and their range of tolerance. Physicists are also employed as financial analysts and consultants.



Classes are held in English



COURSE STRUCTURE

There are two Semesters, from October to the end of January, and from March to mid-June. The Winter Exam Session is in February.

| 1st year | ECTS | 2nd year | ECTS |
|--|-------------|---|-------------|
| Advanced | | Free choice activities* | 12 |
| Electromagnetism | 6 | Project/stage | 6 |
| Advanced Physics Laboratory | 12 | Final dissertation / Master thesis | 42 |
| Theoretical Physics | 6 | | |
| <i>Two courses to be chosen among:</i> | | * Elective courses can be chosen among those offered by the master degree in Physics or other degrees in UNICAM. Up to 6 ECTS can be acquired also with 'soft-skills' training activities organized by UNICAM, language courses, etc. | |
| Many Body Physics | 6 | | |
| Quantum Field Theory | 6 | | |
| Quantum Information | 6 | | |
| Statistical Mechanics | 6 | | |
| <i>Two courses to be chosen among:</i> | | | |
| Atomic Physics | 6 | | |
| Nuclear Physics | 6 | | |
| Quantum Optics | 6 | | |
| Solid State Physics | 6 | | |
| Topics in Condensed Matter Physics | 6 | | |
| <i>Two courses to be chosen among:</i> | | | |
| Cosmology | 6 | | |
| Fundamentals of Materials Science | 6 | | |
| General Relativity | 6 | | |
| Numerical Methods of Physics | 6 | | |
| Physics of Nanotechnologies | 6 | | |
| Soft-matter Physics | 6 | | |

QUALITY ASSURANCE SYSTEM

UNICAM Quality Management System Certificate ISO 9001:2008 (from AFAQ-France, a French leader and one of the first certification bodies at the global level) guarantees students the quality of services provided.

The guarantee is via a rigorous analysis of internal organizational procedures and the prompt addressing of any weaknesses or shortcomings whether detected or reported by the students themselves.

The Quality Management System includes the following support services for students: orientation and guidance, mentoring, International mobility, Internships and communication. These integrate with and support the educational activities, so as to contribute to the complete training of the student.



For 2019, in the **U-MULTIRANK** international ranking, UNICAM was placed among the top 25 universities in the world in the area of international orientation, chosen among 1700 universities (of which 49 are Italian) from 96 countries.

The annual ranking takes into consideration the areas of greatest interest to students such as teaching and learning, knowledge transfer, orientation and research.



ay. 2019/2020