eman ta zabal zazu

Universidad del País Vasco
Euskal Herriko Unibertsitatea

ZIENTZIA ETA TEKNOLOGIA FAKULTATEA
FACULTAD DE CIENCIA Y TECNOLOGÍA

MASTER IN QUANTUM SCIENCE AND TECHNOLOGY

www.ehu.eus

INTRODUCTION & OBJECTIVES

Quantum physics lies at the center of science and engineering in our new century. This Master's program squarely recognizes this fact by providing a solid foundation in several facets of quantum science and technology. Teaching and mentoring responsibilities are undertaken by University teaching staff and Ikerbasque researchers, with proven track record in both teaching and research. The students can choose among two possible career paths: Fundamental Physics or Information and Technology (or even a superposition of the two).

CAREER OPPORTUNITIES

This is a research-oriented master that can be considered a step towards doctoral studies. The program provides students with transferable skills in acquisition, creation and presentation of knowledge, with special emphasis in individual work and initiative within a research group.

ENTRY PROFILE

This Master's program is primarily aimed at candidates holding a Degree in Physics. Students holding a Degree in other branches of Science (e.g. Chemistry), or Engineering, are also encouraged to apply.

An undergraduate level of Quantum Mechanics is required for any successful applicant. The Master's Academic Committee may exceptionally accept other applicants who deem suitably qualified and motivated for this course.

ABOUT THE COURSE

Teaching place:
Faculty of Science and Technology (Leioa).
Teaching type: On-site.
Teaching language: English.
Approximate fees: 2.200-2.400 €.
Calendar: October-June.

TEACHING LOAD

Compulsory subject courses	Optional subject courses	Research Projects	Total
20 Credits ECTS	20 Credits ECTS	20 Credits ECTS	60 Credits ECTS

TRAINING SYLLABUS

MANDATORY SUBJECTS

- Advanced quantum mechanics
- Quantum field theory
- Quantum optics and information
- Quantum statistical physics and condensed matter.

RESEARCH PROJECT

- Cosmology
- General Relativity and Gravitation
- Field Theory
- Condensed Matter Physics
- Cold Matter
- Quantum Simulation
- Quantum Information
- Quantum Optics
- Quantum Control.

OPTIONAL COURSES (some will not be offered every year):

- Fields and particles
- Mathematical Tools;
- Quantum aspects of cosmology and astrophysics
- Superstrings and supersymmetry
- Cold matter physics
- Quantum information: formalism and physical implementations
- Quantum Technologies
- Advanced Quantum Optics
- Semiconductor physics, Transport and Spintronics
- Topics in Fundamental Physics.

CONTACT

Academic information:
Jose Juan Blanco Pillado
Phone: +34 94 601 2594
Email: quantummaster@ehu.eus

PARTNER WITH A COOPERATION AGREEMENT

ikerbasque
Basque Foundation for Science

www.ehu.eus/en/web/master/master-science-quantum-technology