

## Master in Physics of Condensed Matter and Biological Systems

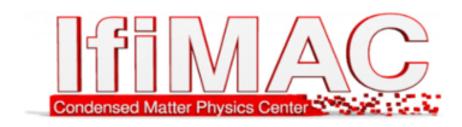




www.masternanobio.es

# DEPARTMENT OF CONDENSED MATTER PHYSICS

# DEPARTMENT OF THEORETICAL CONDENSED MATTER PHYSICS



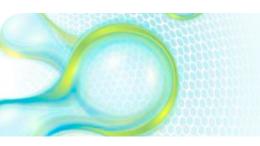








## Two specializations



Master in Physics of Condensed Matter and Biological Systems

# **Nanophysics**





Master in Physics of Condensed Matter and Biological Systems

## **Biophysics**



- ✓ Strong interdisciplinarity
- ✓ Students background for Nanophysics: Physics, Materials Science, Nanotechnology, Engineering.
- ✓ Students background for Biophysics: Physics, Biology and Biochemistry, Biotechnology, Chemistry, Engineering.

## 60 ECTS, 1 year

## First semester (Compulsory subjects)

### Common basic knowledge (15 ECTS)

EXPERIMENTAL TECHNIQUES IN NANOPHYSICS AND BIOPHYSICS (6 ECTS)

PHYSICS FOUNDATIONS (6 ECTS)

PROFESSIONAL SKILLS (3 ECTS)

## Fundamental knowledge by specialization (12 ECTS)

#### **NANOPHYSICS**

ADVANCED STATISTICAL PHYSICS(6 ECTS)

INTERACTIONS AND LOW-DIMENSIONAL SYSTEMS IN CONDENSED MATTER (6 ECTS)

#### **BIOPHYSICS**

THEORETICAL METHODS IN BIOPHYSICS (6 ECTS)

EXPERIMENTAL AND COMPUTATIONAL METHODS IN BIOPHYSICS (6 ECTS)

## **Second semester** (Elective subjects + Final Master Thesis)

## Specialized knowledge (33 ECTS)

12 ECTS to choose from:

#### **NANOPHYSICS**

LOW TEMPERATURE PHYSICS (4 ECTS)

SURFACE NANOSCIENCE (4 ECTS)

NANOPHOTONICS AND QUANTUM OPTICS (4 ECTS)

QUANTUM FIELD THEORY IN CONDENSED MATTER PHYSICS (4 ECTS)

#### **BIOPHYSICS**

**CELLULAR BIOPHYSICS (4 ECTS)** 

SYSTEMS BIOLOGY (4 ECTS)

**BIOINFORMATICS (4 ECTS)** 

**NEUROSCIENCE (4 ECTS)** 

#### SUBJECTS COMMON TO BOTH SPECIALIZATIONS

**IMAGE PROCESSING AND ANALYSIS (4 ECTS)** 

COMPUTATIONAL METHODS IN CONDENSED MATTER PHYSICS AND BIOMOLECULES (4 ECTS)

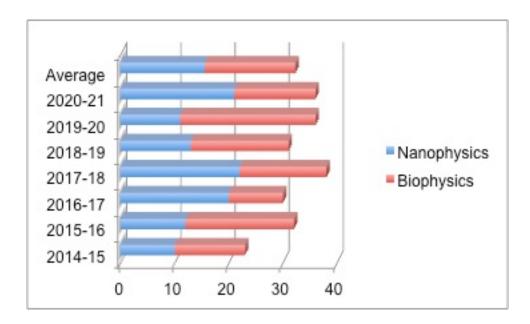
SCANNING PROBE MICROSCOPIES (4 ECTS)

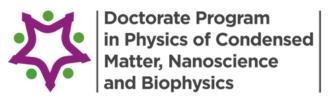
## **Final Master Thesis Project (21 ECTS)**

## **Final Master Thesis**

- ✓ 4-12 months
- ✓ IFIMAC grants for Master studies
- ✓ Possibility to do FMT in other european university (Erasmus+ Internship)

## Students enrolled since implementation









### www.doctorate-nanobio-uam.es

~180 PhD students enrolled since the Program implementation in 2014-2015

- ✓ Biophysics and Statistical Physics of Complex Systems.
- ✓ Nanoplasmonics, Nanoelectronics, and Quantum Optics.
- ✓ Low-temperature Physics (Superconductivity, Superfluidity).
- ✓ Surface Physics.
- ✓ First-principles Simulations and Modeling.
- ✓ Experimental Characterization of Molecular, Nanoscopic and Biological Systems.
- ✓ Physical properties of Molecular, Nanoscopic and Biological Systems.

## Some numbers (June 2020)

- √ 5% dropout rate
- √ 395 publications in scientific journals
- ✓ 6.01 average impact per publication (Web of Science)
- √ 3258 citations 11.7 average citations per thesis (before completion).