

Ph.D course in Geometry and Mathematical Physics

Head of the Ph.D course: Prof. Antonio Lerario

Web site: [Geometry and Mathematical Physics](#)

Research lines:

- Integrable systems in relation with differential, algebraic and symplectic geometry, as well as with the theory of random matrices, special functions and nonlinear waves, Frobenius manifolds.
- Deformation theory and virtual classes for moduli spaces of sheaves and of curves, in relation with supersymmetric gauge theories, strings, Gromov-Witten invariants, orbifolds and automorphisms.
- Quantum groups, noncommutative Riemannian and spin geometry, applications to models in mathematical physics.
- Mathematical methods of quantum mechanics.
- Mathematical aspects of quantum Field Theory and String Theory.
- Symplectic geometry, sub-riemannian geometry, stochastic geometry, real algebraic geometry.
- Geometry of quantum fields and strings.
- Complex differential geometry.
- Generalized complex geometry.

Fellowships available: 8

Admission: Academic and scientific qualifications + oral exam

Beginning of the Courses: 3 October, 2022

Evaluation of academic and scientific qualifications: 30 points

Access to Oral Exam: minimum mark of 21/30 in the academic and scientific qualifications evaluation up to a maximum of 15 admitted candidates.

Evaluation of Oral Exam: 70 points

Total Evaluation: 100 points

Eligibility: 70 points

Single Session

Deadline for online submission of applications: 3 February, 2022

Oral Exam: 14 - 18 February, 2022

Admission to the written exam and results of all evaluations will be notified by email.