

Geometric Mechanics
Master's Program in Mathematics
Fall Semester, 2024/25

Professor: Pedro Girão

Course Description

1. Mechanical systems
2. Holonomic constraints
3. Rigid body
4. Non-holonomic constraints
5. Lagrangian and Hamiltonian mechanics
6. Completely integrable systems
7. Symplectic and Poisson geometry
8. Symmetry and reduction

Office hours

Tuesdays, 2 pm to 4 pm, in my office.

Evaluation

Homework is due two weeks after it is assigned and is worth 50% of the final grade. There will be two exams: on Friday, **January 24, 11:30 pm** and on **Friday, February 7, 15:30 pm**. If a student decides to attend both, the best of the two grades will be considered; it is worth 50% of the final grade. To be approved a student must have an exam grade of 8 or more. Final grades of 19 or 20 are confirmed in an oral exam.