



In the framework of the activities of the PhD programme in Mathematical Sciences

**Giuseppe Gaeta**  
University of Milan

will offer a PhD course on

## **Population Genetics and Evolution**

### **Abstract**

1. Population models.
2. The “principle of competitive exclusion”.
3. Mutations. Neutral traits, evolution.
4. Multi-species competition. Complex genome. Fitness.
5. Mutations for complex genomes.
6. Fujiyama, Eiffel, and Sharp-peak models.
7. Markov processes. The Hardy-Weinberg process and Mendel laws.
8. Branching processes, the Wright-Fisher models, the coalescent.
9. The master equation; application to the Moran process.
10. Large deviations, Statistics of extreme events, neutral evolution.

### **Scheduling**

The course will be held via Zoom platform  
**from February 4 to February 12, 2021**

**from 10.00 to 12.00**

The Zoom link will be provided directly by Prof. G. Gaeta