

**Course in Systems Biology**

2CFU – April-May 2022

Organized by Giovanni Scala

The course aims at providing the students with the basics approaches and principles of Systems Biology spanning from multi-omics data integration to their complex functional characterization. The proposed topics will be accompanied by use cases from real world applications and practical sessions of data analysis.

* Day 1 (3h) 20 April Giovanni Scala (10:00-13:00) (Dept. of Biology, UNINA)

**Introduction to Systems Biology and Omics technologies**

* Day 2 (3h) 22 April (10:00-13:00) Giovanni Scala (Dept. of Biology, UNINA) & Antonio Federico (Faculty of Medicine and Life sciences, Tampere University, Finland)

**Preprocessing and analysis of omics data with Eutopia**

* Day 3 (2h) 24 April (10:00-12:00) Michele Ceccarelli (DIETI, UNINA)

**Large scale integrative bioinformatics and systems biology in cancer genomics**

* Day 4 (3h) 27 April (10:00-13:00) Giovanni Scala (Dept. of Biology, UNINA)

**Integrative analyses of multi-omics data**

* Day 5 (2h) 29 (14:00 16:00) April Francesco Napolitano (Computational Bioscience Research Center, KAUST, Saudi Arabia).

**Systems Biology approaches for drug discovery and repositioning.**

* Day 6 (3h) 4 May (10:00-13:00) Giovanni Scala (Dept. of Biology, UNINA)

**Functional profiling of Mechanism of Actions in multiple experiments**