

CORSO DI DOTTORATO IN BIOLOGIA

Ph.D. COURSES

Offerta didattica esclusiva

2025/2026

BIOR - R TOOLS FOR BIOLOGISTS

Course coordinators: Luca Rindi (Università di Pisa), Antonio Profico (Università di Pisa)

Schedule: February 2026

Duration: 12 hours

Description: This PhD-level course introduces biology students with practical R programming skills to manipulate, clean and visualize biological data. Through hands-on coding exercises and biological case studies, early career researchers will learn how to manipulate and visualize real-world biological datasets producing reproducible and shareable R scripts. The course is organized into theoretical and practical sessions. The PhD students will be asked to write a complete R script that demonstrates the ability to manipulate and visualize biological data using R tools.

Prerequisites: None required.

Preliminary program: Introduction to R (installation, RStudio, working directory, types of R objects); data manipulation in R (e.g., importing and exporting datasets, subsetting, tidy and dplyr packages); data visualization in R (e.g., scatterplot, barplot, heatmap, spatial maps, time series, ggplot2 package); introduction to R programming (iterative functions, logical operators); code and data sharing (GitHub and open-access repositories).

Final exam: yes (final assessment of the competences acquired)