



7<sup>th</sup> edition

# Advanced Course: Data Analysis Using R

June 23<sup>rd</sup> to 27<sup>th</sup> at the University of Aveiro

## General information

**R is a free, open-source software** that runs on different operating systems, is **used world-wide** for data analyses, and has an extensive online help system that can assist the users when they run into a bump on the road. The **thousands of available packages** allow users to perform a panoply of analyses on their data, and cite the exact methodology used.

The present course will consist of **introductory-level lectures** and **hands-on exercises** on command line-based data analysis, using R and RStudio. Attendees will be equipped with tools to understand not only the examples presented, but also to **face new challenges** that are specific to their future analyses.

Attendees should expect to **learn the very basics of R, data manipulation & visualization tools**, and analysis of several data types using different packages.

Applicants should have a background in Biology or related areas, and be scientists or post-graduation students (MSc or PhD). The course has the duration of **40 h** (Advanced Course; 6 ECTS) and is comprised of 10 blocks which are detailed in the following pages. Evaluation will consider attendance, overall interest and participation. A certificate will be provided at the end of the course.

Please install **R** and **Rstudio** before the course starts – or update to **most recent versions**



**FCT**  
Fundação para a Ciência e a Tecnologia

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DO MAR

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dbio

departamento de biologia

## Detailed program \*

	June 23 <sup>rd</sup>	June 24 <sup>th</sup>	June 25 <sup>th</sup>	June 26 <sup>th</sup>	June 27 <sup>th</sup>
Morning	Welcome; Introductory session about R and RStudio	(the good kind of) Data manipulation with the <i>tidyverse</i>	Plots with <i>ggplot2</i>	Univariate and multivariate data analyses	Application: Biological sequences analysis
	Objects and operations in R				
Afternoon	Importing data from different sources	Models with R	Exploratory data analysis	Loops and repeated instructions	Wrap up

\* may change slightly according to attendee interests

## Application & fees

Internal transfers from other departments are accepted

**Apply** by filling out the [form in this link](#) (or QR-code)

Any questions: [cifidalgo@ua.pt](mailto:cifidalgo@ua.pt)

