



FEDERAL UNIVERSITY OF SANTA CATARINA  
GRADUATE COURSE IN ECOLOGY

SYLLABUS



SEMESTER 01 / 2023

**1. GENERAL INFORMATION**

CODE	COURSE NAME	WORKLOAD - WEEK		WORKLOAD - SEMESTER
ECO410030	Ecological data and graphs in R	30		30
	Number of students	Minimum: 4	Maximum: 20	N of credits: 1

**2. SCHEDULE**

March 8<sup>th</sup> to 10<sup>th</sup> (Wednesday, Thursday and Friday), 100% in person.  
Mornings starting at 8:30 AM until 12 AM, afternoons starting at 2 PM until 5 PM.

**3. LECTURERS**

Dr. Luis Macedo Soares  
Dra. Aurea Luiza Lemes  
Prof. Dr. Eduardo Giehl

**4. GRADUATE COURSE**

Ecology

**5. COURSE OUTLINE**

First steps in R: installing R and additional packages. The R language: functions, data types, objects and graphs. Data entry: vectors, matrices, data-frames and lists. The course will be taught in Portuguese.

**6. COURSE OBJECTIVES**

To train MSc and PhD students in their first steps in R programming. We expect all students who finished the course will have a background to start learning in statistical analysis and to load data and prepare graphs in R environment.

**7. DESCRIPTION OF METHODS**

The course will be held for 3 consecutive days. The course is mainly practical, so all practices will be carried out on computers. We ask to all enrolled students, if possible, to bring their own computers.

**8. ASSESSMENT**

We will use participation and ability to use the tools learned in the classes as means of assessment.

## 9. COURSE PROGRAM

- Module 1 (Wednesday/March 8<sup>th</sup>). Introduction to the environment R: Program installation, creation and manipulation of simple objects, basic graphics
- Module 2 (Thursday/March 9<sup>th</sup>) Different types of objects (functions, vectors, matrices, factors, lists and data tables), indexing and extraction, related graphics
- Module 3. (Friday/March 10<sup>th</sup>) Loading and manipulating data, and an introduction to databases, more graphics.

## 10. REFERENCES

- Crawley, Michael J. 2005. Statistics: an introduction using R. Imperial College of London, UK, 337p.
- Dalgaard, Peter. 2008. Introductory statistics with R. Second Edition. Springer Science & Business Media, 267p.
- Logan, Murray. 2010. Biostatistical Design and Analysis Using R: a practical guide. John Wiley & Sons. 547 p.
- Quick-R: Accessing the power of R. <http://www.statmethods.net/>
- Vries, A; Meys, J. 2012. R for Dummies. John Wiley & Sons. 387p.