



FEDERAL UNIVERSITY OF SANTA CATARINA  
GRADUATE COURSE IN ECOLOGY

SYLLABUS



SEMESTER 01 / 2025

**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 10<sup>th</sup> to 14<sup>th</sup> (Monday, Wednesday, and Friday)

Mornings starting at 9:00 AM until 12:00 AM, afternoons starting at 2:00 PM until 5:00 PM.

**3. LECTURERS**

Dr. Alexandre Marcel da Silva Machado

Dr. Rafael Barbizan Suhs

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 three 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**

The assessment consists of a list of exercises to be submitted through the course Moodle by March 21<sup>st</sup>.

## 9. COURSE PROGRAM

- Module 1 (Monday/March 10<sup>th</sup>). Introduction to the environment R: Program installation, creation and manipulation of simple objects, basic graphics
- Module 2 (Wednesday/March 12<sup>th</sup>) Different types of objects (functions, vectors, matrices, factors, lists and data tables), indexing and extraction, related graphics
- Module 3. (Friday/March 14<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.
- Silva, F.R., Gonçalves-Souza, T., Paterno, G.B., Provete, D.B., Vancine, M.H. 2022. Análises ecológicas no R. Nupeea: Recife, PE, Canal 6: São Paulo. 640 p. ISBN 978-85-7917-564-0.
- Vries,A; Meys, J. 2012. R for Dummies. John Willey & Sons. 387p.